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Public Preferences Related to Radioactive Waste Management in the United States: Methodology and Response Reference Report for the 2016 Energy and Environment Survey

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ABSTRACT

This report presents the questions and responses to a nationwide survey taken June 2016 to track preferences of US residents concerning the environment, energy, and radioactive waste management. A focus of the 2016 survey is public perceptions on different options for managing spent nuclear fuel, including on-site storage, interim storage, deep boreholes, general purpose geologic repositories, and geologic repositories for only defense-related waste. Highlights of the survey results include the following: (1) public attention to the 2011 accident and subsequent cleanup at the Fukushima nuclear facility continues to influence the perceived balance of risk and benefit for nuclear energy; (2) the incident at the Waste Isolation Pilot Plant in 2014 could influence future public support for nuclear waste management; (3) public knowledge about US nuclear waste management policies has remined higher than seen prior to the Fukushima nuclear accident and submittal of the Yucca Mountain application; (6) support for a mined disposal facility is higher than for deep borehole disposal, building one more interim storage facilities, or continued on-site storage of spent nuclear fuel; (7) support for a repository that co-mingles commercial and defense related waste is higher than for a repository for only defense related waste; (8) the public's level of trust accorded to the National Academies, university scientists, and local emergency responders is the highest and the level trust accorded to advocacy organizations, public utilities, and local/national press is the lowest; and (9) the public is willing to serve on citizens panels but, in general, will only modestly engage in issues related to radioactive waste management.

EXECUTIVE SUMMARY

The Energy & Environment (EE) survey series tracks evolving public views on nuclear energy and nuclear materials management in the United States (U.S.). The EE survey series has been conducted annually since 2006 by the Center for Energy, Security & Society (CES&S), a joint research collaboration of the University of Oklahoma and Sandia National Laboratories. The 2016 wave of the Energy and Environment survey (EE16) was implemented using a web-based questionnaire, and was completed by 2106 respondents using an Internet sample that matches the characteristics of the adult U.S. population as estimated in the U.S. Census. A focus of the EE16 survey was public preferences and support for different spent fuel management options, including continued on-site storage, interim storage, deep boreholes, geologic repositories, and an integrated systems approach. Additionally, the survey measured public preferences for a repository for only defense-related waste versus a repository that would co-mingle both defense and commercial wastes. Finally, the EE16 survey included questions regarding how survey respondents would likely engage in issues related to managing spent nuclear fuel (SNF). Highlights of the EE16 survey results include the following.

NUCLEAR CONTEXT

LONG-TERM TRENDS IN PUBLIC SUPPORT FOR NUCLEAR ENERGY

Perceptions of the risks and benefits of nuclear energy create a foundation upon which members of the public formulate opinions about the safety of nuclear waste management, including the transport, storage, and disposal of SNF. Americans' attitudes toward nuclear energy have fluctuated considerably over the last 5 decades, and are likely to continue to do so in response to new information, events, and circumstances. Figure E-1 shows the results of a meta-analysis of changes in the perceived risks of, and support for, nuclear energy among U.S. residents from the 1973 to 2016. This analysis is based on publicly available U.S. surveys taken during that period, for which average support and the balance of perceived risks in each survey could be estimated. The trend evident in these surveys indicates that support dropped (and perceived risks rose) markedly in the late 1970s, bottoming out after the Chernobyl nuclear accident. Support gradually rose (though perceived risks remained above midscale) over the next several decades, coinciding with the "nuclear renaissance" period which spanned the first decade of this century. The meta-data also show that, after a period of relative support for nuclear energy, support declined (and perceived risks rose) on the heels of the Fukushima nuclear accident in March 2011. In the last few years since the Fukushima accident, the plot shows that while perceptions of risk have begun to plateau, support for nuclear energy continues to decline.

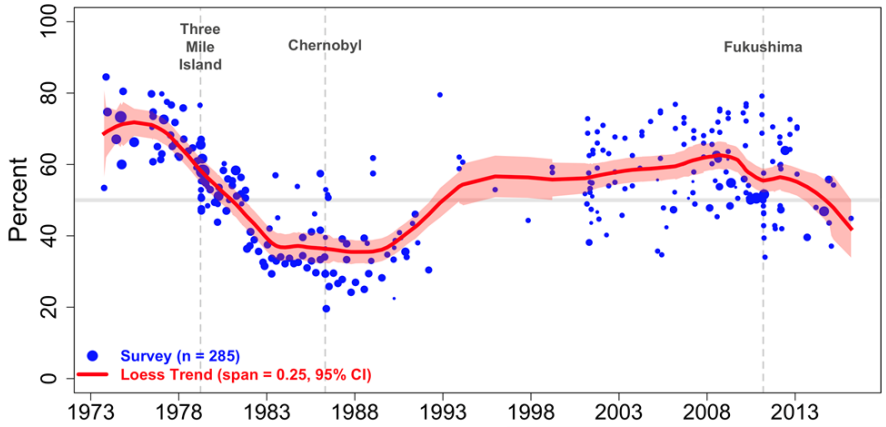

Figure E-1. Public support for nuclear energy measured in surveys from 1973 to 2016.

INFLUENCE OF CRISIS EVENTS

Recent and ongoing events like Fukushima can have a lingering effect on the future of nuclear energy in the minds of the public. Beginning in May 2011, the EE surveys have tracked this effect by posing direct questions to respondents about the extent to which the Fukushima event has influenced their support for nuclear power production in the U.S. (Figure E-2). Public attention to the event at the Fukushima nuclear power plant continues to influence the balance of risk and benefit perceptions for nuclear energy in the U.S., though the magnitude of the negative effect of Fukushima on support for nuclear energy has diminished in the last two years.

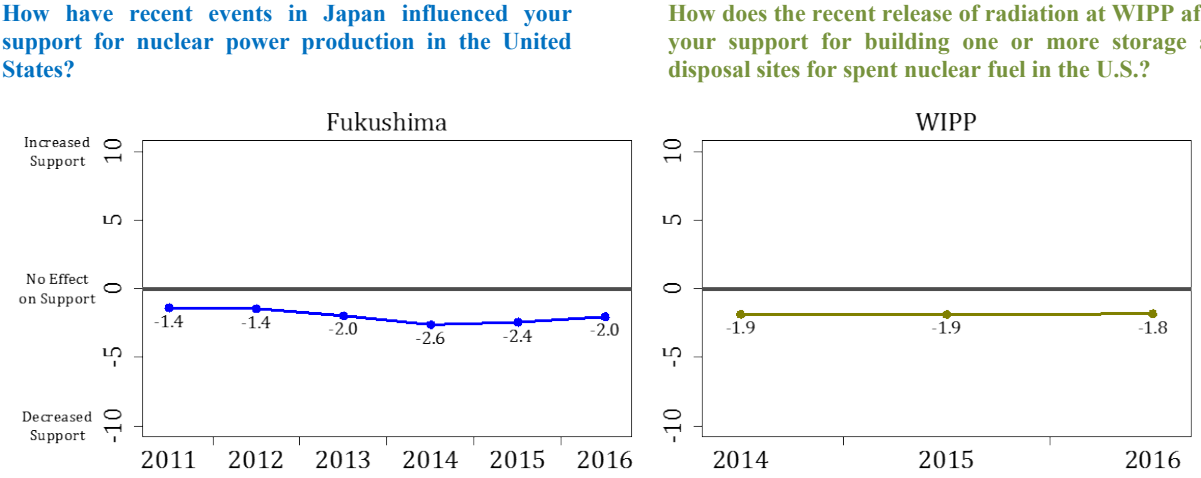

Figure E-2. Influence of Events at Fukushima Japan and Waste Isolation Pilot Plant on Support for Nuclear Power and Support for Storage and Disposal Sites.

The broader public is not well informed about the Waste Isolation Pilot Plant (WIPP) for transuranic radioactive waste in southern New Mexico; only 8.5% of our 2016 respondents said they had heard about the facility. But when given information about release of trace amounts of airborne radionuclides at WIPP that occurred in 2014, respondents indicate reduced levels of support for building new storage and disposal facilities in the U.S.

PERCEIVED RISKS AND BENEFITS OF NUCLEAR ENERGY

To track the public's perceived balance of risks and benefits, the EE16 survey asked respondents four questions each related risk and benefits. When evaluating the risks associated with nuclear energy, the risk of terrorist attacks at nuclear power plants was rated the highest of the four risks (Figure E-3). The greatest benefit of nuclear energy was the contribution of nuclear energy to U.S. energy independence.

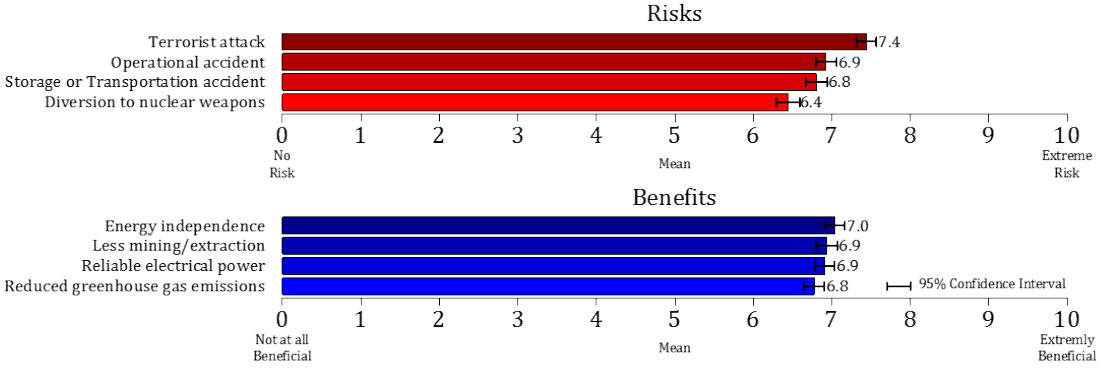

Figure E-3. Public Perceives Nuclear Energy is Both Highly Risky and Highly Beneficial.

Members of the public weigh the risks and benefits of nuclear energy when making decisions about the future of energy and nuclear technology in the U.S. For example, the top plot in Figure E-4 shows that, among those who perceive nuclear energy to be more beneficial than risky, support for the construction of new nuclear power plants in the U.S. is well above mid-scale. As is also evident in Figure E-4, among those who perceive nuclear energy to be more risky than beneficial, opposition to nuclear energy is the norm.

Risk and benefit calculations also influence the way in which members of the public process information about accidents at power plants and storage facilities (as shown in the middle and bottom plots in Figure E-4). The Fukushima and WIPP events evoked opposite responses from people at the high and low end of the risk/benefits trade-off spectrum. The events significantly reduced support for nuclear energy/waste management facility siting among people who believe that the risks outweigh the benefits, but slightly increased support among those who believe that the benefits greatly outweigh the risks.

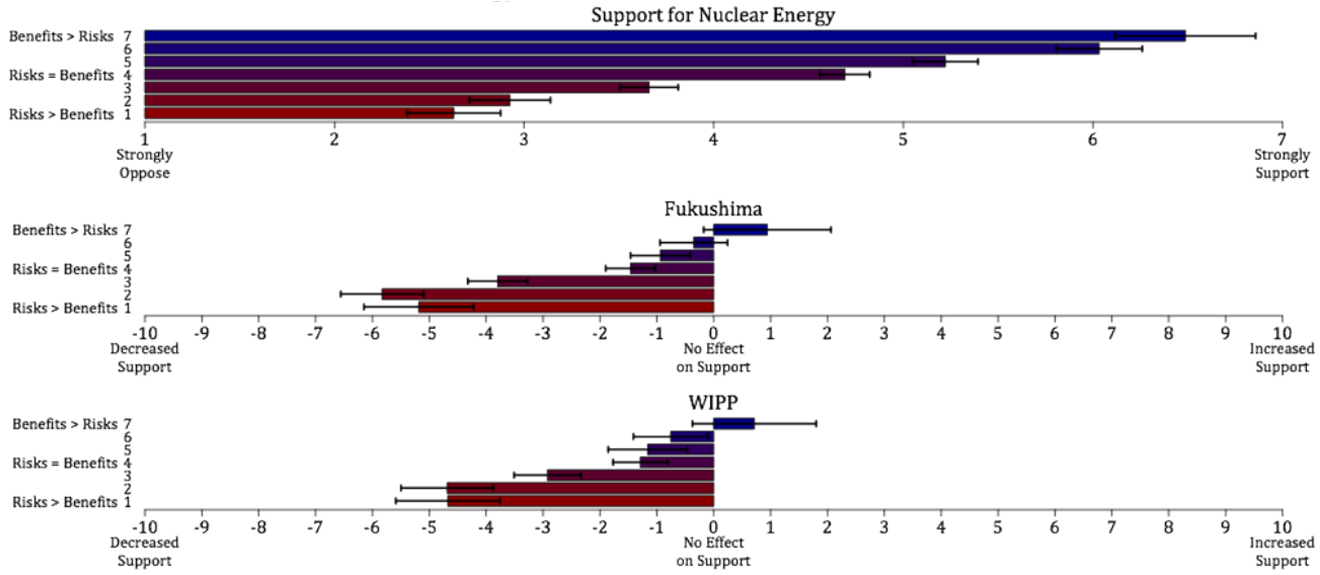

Figure E-4. Influence of Risk/Benefit Perceptions and Nuclear Accidents on Support for Nuclear Energy

PUBLIC KNOWLEDGE ABOUT RADIOACTIVE WASTE POLICY

To successfully manage SNF, it is important to evaluate the background knowledge and understanding of the relevant aspects of the nuclear fuel cycle that can be expected of the public. CES&S surveys measure public knowledge about aspects of current policy about SNF, and respondents' beliefs about the proximity of their residences to nuclear power plants and SNF storage sites. For instance, how much do members of the public know about current SNF policies in the U.S.? Figure E-5 shows public responses to questions about existing nuclear waste management practices. As regards the question on what is currently be done with SNF, only 38% of the respondents chose the correct option of on-site cooling pools. Nearly 21% of respondents believed that SNF was being stored underground in Nevada, and close to 22% responded that SNF is being shipped to regional facilities.

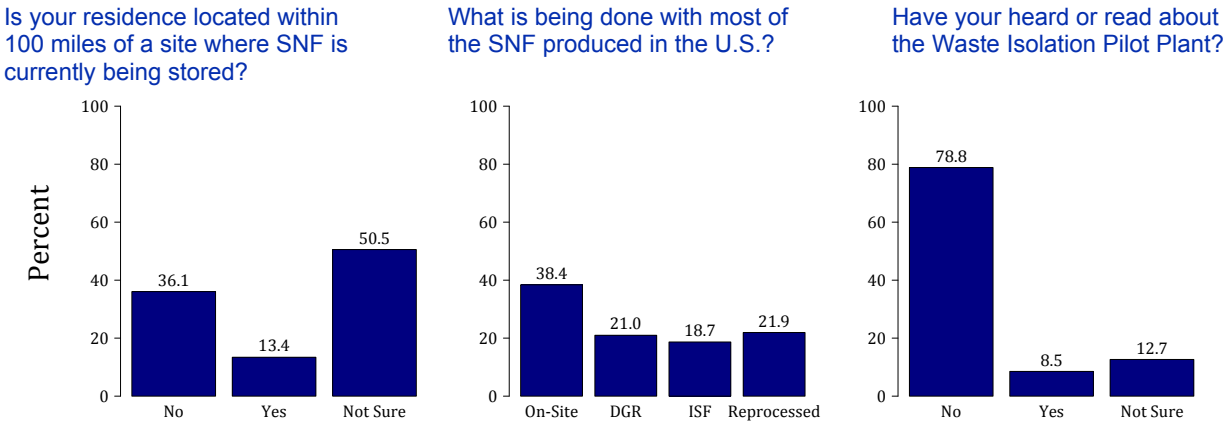

Figure E-5. Public Awareness about Nuclear Waste Management Practices in 2016

Respondent's answers do vary from year to year. The public's knowledge about U.S. nuclear waste management policies increased in the period following the motion to withdraw the application for the licensing of the Yucca Mountain facility in 2010, and following the Fukushima nuclear plant accident in 2011. While previous surveys had suggested that levels of public knowledge may be dropping back to the levels evident preceding the Fukushima nuclear accident, results from EE16 indicate a resurgence in the percentage of respondents who knew about current SNF policy (Figure E-6). In general, however, the 2016 survey continues to show that the broader public is not well informed about the nuclear fuel cycle.

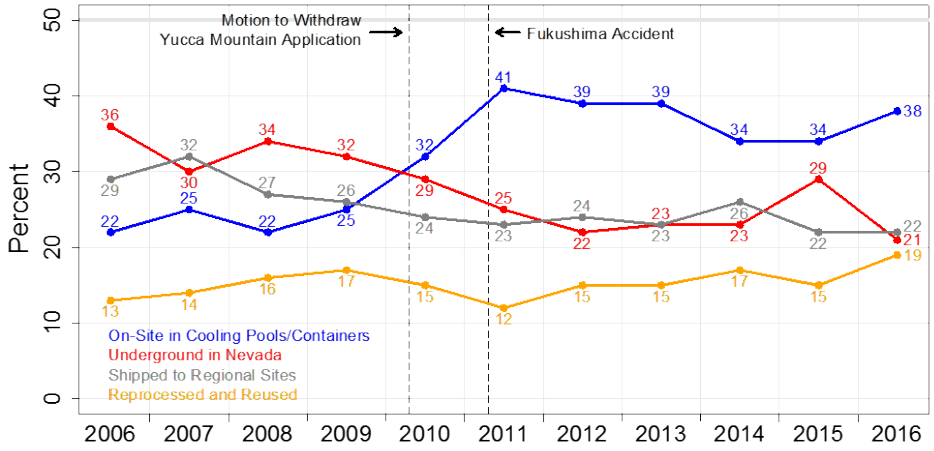

Figure E-6: Trends in Public Knowledge of Current SNF Policy in the U.S.

PUBLIC PREFERENCES FOR STORAGE AND DISPOSAL OPTIONS

The 2016 survey included questions about five different storage and disposal options for SNF management. Options range from continued reliance on on-site storage, building one or more interim storage facilities, building a mine-like disposal facilities deep underground, drilling deep boreholes for disposal, and implementing an integrated system. Results suggest that public support varies for different policy options for the storage and disposal of SNF. Support for a permanent disposal facility and an integrated system approach were higher than that for continued on-site storage or building one or more interim storage facilities (Figure E-7).

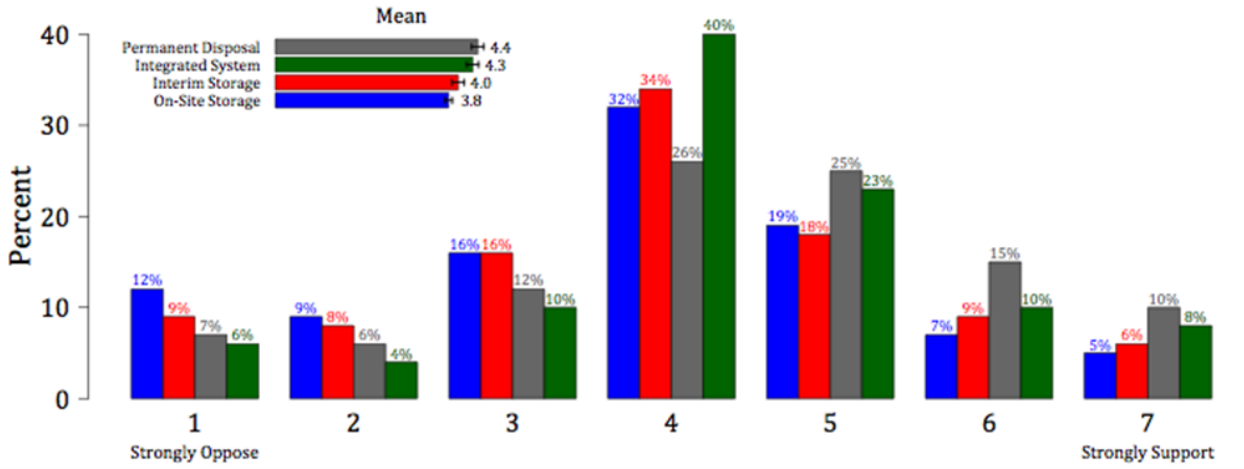

Figure E-7. Support for Continued On-Site Storage, Consolidated Interim Storage, and Disposal Separately and Consolidated Interim Storage and Disposal as Integrated System in 2016.

Another important factor for SNF disposal options concerns the origin of the waste (i.e., whether the waste was produced by defense or civilian activities). We asked respondents about whether the nation's defense wastes should be co-mingled with commercial SNF, or emplaced in a separate defense-waste-only facility. Results indicate a preference for a co-mingled facility that disposes of both defense and commercial nuclear waste, to a facility designed exclusively for defense waste generated during military and strategic research (Figure E-8).

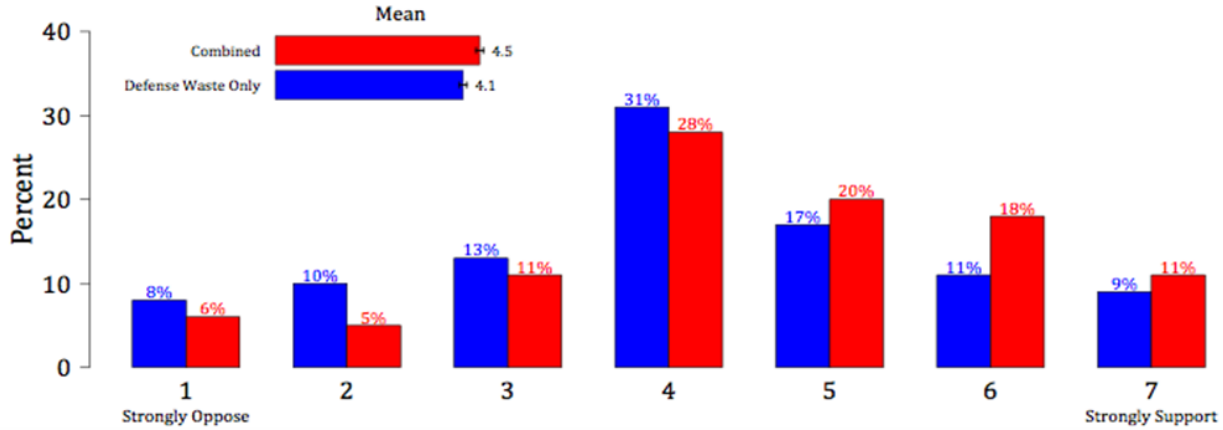

Figure E-8. Public Support in 2016 for a Repository for Only Defense Waste Versus a Repository that Combines Defense and Commercial Wastes.

Finally, we found that public support for an underground mine-like repository is significantly higher than that for a surface storage facility. Support for deep borehole disposal ranks second, well ahead of a surface storage option (Figure E-9).

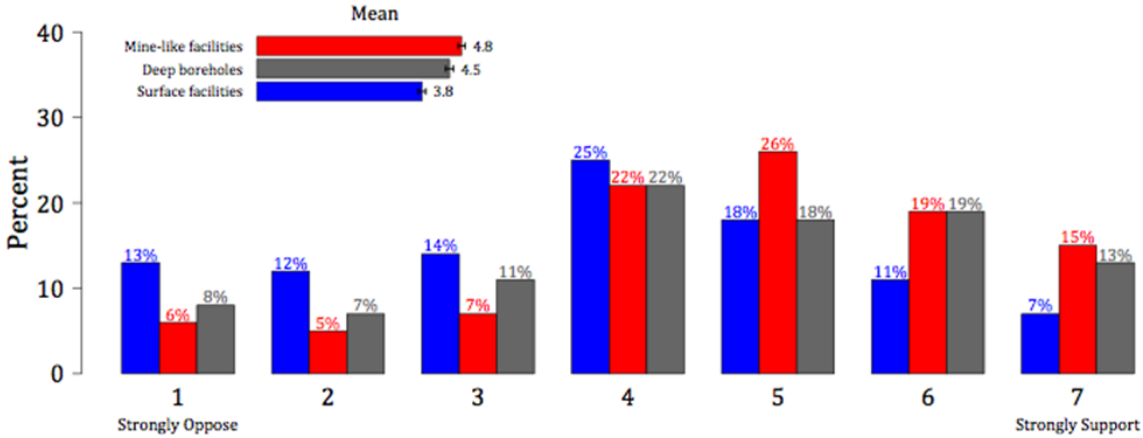

Figure E-9. Public Support in 2016 for Facility Design Options for Storage and Disposal.

INSTITUTIONAL TRUST

The 2016 survey also measured trust for key institutions including their perceived biases in risk and benefit communication in the context of storage and disposal of SNF. When asked about trust in the information provided by different agencies involved with managing radioactive waste, members of the public place the most trust, on average, in technical experts like university scientists (mean value of 6.6) or those from the National Academy of Sciences (NAS) (mean value of 6.5). Local emergency managers were also high on the list of trusted actors (mean value of 6.1) (Figure E-10).

Government organizations like the national labs, the Environmental Protection Agency (EPA), Nuclear Regulatory Commission (NRC), Department of Energy (DOE) were close behind the top trusted actors, with mean values above midscale for all these entities, followed closely by technical experts from environmental groups. State regulatory agencies were seen as moderately trustworthy sources of information, with mean values slightly above midscale. Note that the hypothetical "Fedcorp," although accorded a moderate level of trust (mean value of 5.2), was significantly less trusted than existing federal agencies.

Figure E-10 shows the actors that are not seen as highly trusted sources of information (in red). These range from groups whose purpose is to oppose or support nuclear energy, utility companies, and both national and state news media.

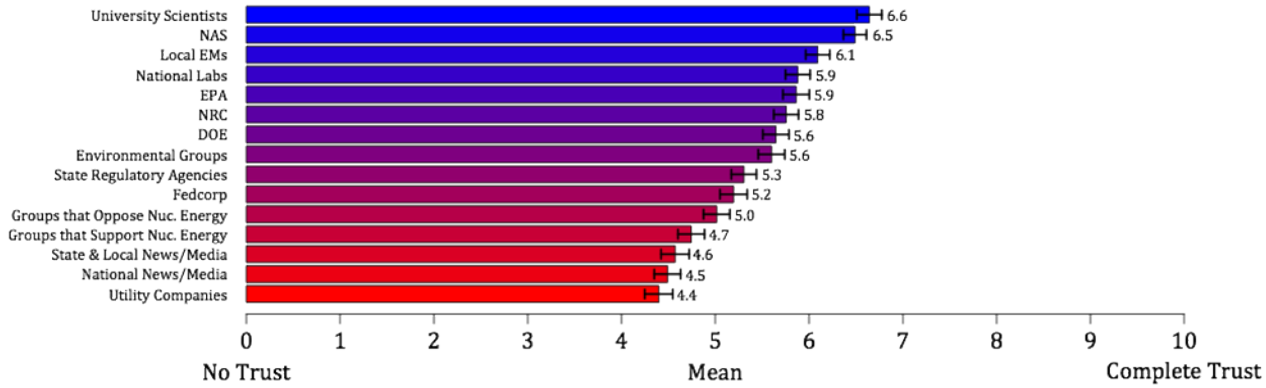

Figure E-10. Trust in Information Provided by Institutions Potentially Involved with Managing Radioactive Waste in 2016.

In addition to studying the level of trust accorded to each group, it is important to understand whether members of the public expect to observe a systematic pattern of bias from experts within the various organizations involved in SNF siting debates. When information is conveyed about the risks or benefits of siting a nuclear waste facility, is this information perceived as being downplayed, exaggerated, or accurately assessed? EE16 included a set of questions designed to evaluate whether some groups are perceived to systematically understate or downplay risks and/or benefits associated with SNF facility siting, while others may be perceived as prone to exaggerate those risks and/or benefits. In Figure E-11, the top graph displays their perceptions about how organizations would characterize the *risk* of SNF facility siting and the bottom plot displays their perceptions about how organizations would characterize the *benefits* of SNF siting.

As shown in Figure E-11, university scientists and the NAS are seen as the *least likely* to either exaggerate or downplay the risks and benefits of siting a SNF facility. 57% of respondents thought that university scientists would accurately describe risks, and 56% thought the same about the NAS. On the benefits of facility siting, 54% thought that the NAS would accurately describe the benefits and 49% thought so about university scientists. National labs, local emergency managers and federal regulators and government agencies (NRC, DOE, EPA) were expected to be modestly accurate in their description of risks and benefits of siting a permanent disposal facility. Note that for both risk and benefit assessment, the hypothetical "Fedcorp" was expected to be less accurate than the DOE and other existing federal agencies.

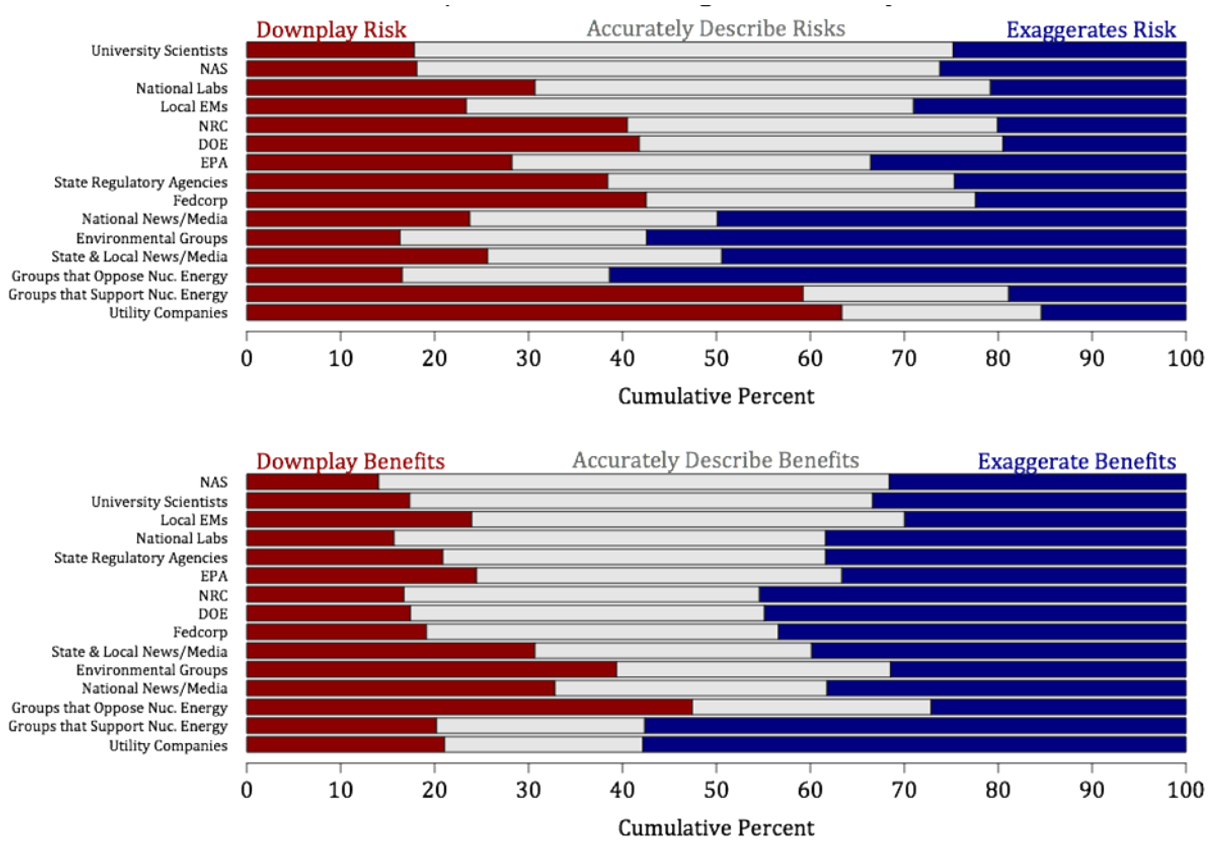

Figure E-11. Public Perception about How Various Institutions are Likely to Describe the Risks/Benefits of Hosting a SNF Facility.

Finally, utility companies, groups whose purpose is to support or oppose nuclear energy, environmental groups, and state and national media were seen as the *least accurate* in their risk/benefit assessments. It is important to note that these findings represent a broad cross-section of U.S. residents; a more localized population with different characteristics or communities with pre-existing experiences with some of these actors may have a different set of trust ratings.

PUBLIC ENGAGEMENT ON RADIOACTIVE WASTE MANAGEMENT

It is often assumed that when mechanisms of engagement are created, members of the public will use them to provide input. To test this assumption, the 2016 survey respondents were asked about the likelihood that they would participate in the debate and policy process concerning a nuclear facility within 50 miles of their primary residence. The survey included seven different mechanisms of engagement. Figure E-12 presents mean values for likely engagement in each mechanism ranging from blue (indicating the mechanisms respondents were most likely to utilize) to red (indicating those least likely to be utilized).

As shown, attending informational meetings about the nuclear facility (mean score of 4.2), expressing their opinion about the process on social media platforms (3.9), and writing to their elected representatives about the facility siting (3.9) were chosen as the most likely means of engagement. Interestingly, serving on a citizens' committee also received a similar feedback (mean score of 3.7), despite the time and effort that would be involved in serving on such a committee. This finding suggests that if given the opportunity (and adequately notified of the opportunity), a reasonable fraction of local

residents would be willing to serve on citizens' committees. The least favored means of engagement included helping to organize opposition or support to the nuclear facility (mean scores of 3.3 and 3.0 respectively), and expressing views at a public hearing (3.1). Overall, however, Figure E-12 indicates that regardless of the mechanism employed, people were only modestly likely to engage. At best, the mean scores hovered around mid-scale, indicating that engagement is unlikely to be widespread and that the entity in charge will likely have to find creative ways to engage the public to garner feedback.

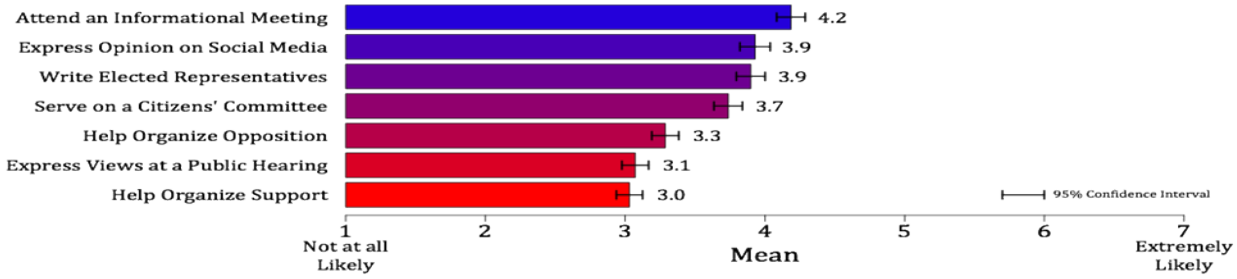

Figure E-12: Public Preferences for Engagement on the Debate and Policy Process for a Nuclear Facility within 50 miles of Primary Residence.

CONTENTS

FIGURES

TABLES

ACRONYMS

CES&S	Center for Energy, Security & Society, University of Oklahoma
DGR	deep geologic repository
DOE	U.S. Department of Energy
EE	Energy and Environment survey series
EE16	2016 Energy and Environment survey conducted by CES&S
EPA	U.S. Environmental Protection Agency
ISF	interim storage facility
NAS	National Academy of Sciences
NGO	nongovernmental organization
NRC	U.S. Nuclear Regulatory Commission
SNF	spent nuclear fuel
SSI	Survey Sampling, Inc.
U.S.	United States
WIPP	Waste Isolation Pilot Plant

1. INTRODUCTION

BACKGROUND

The Energy and Environment (EE) survey series was initiated in 2006 and is conducted annually by the Center for Energy, Security & Society (CES&S), a joint research collaboration of the University of Oklahoma and Sandia National Laboratories. The EE survey assesses preferences of cross-section of the American public about nuclear energy and nuclear waste management and places the preferences in context with environmental concerns.[1] The 2016 iteration of the EE survey (EE16) was implemented using a web-based questionnaire, and was completed by 2,106 respondents using an Internet sample that matches the characteristics of the adult U.S. population,[2] as estimated in the 2015 U.S. Census. EE16 was conducted 14-15 June 2016.

This report addresses four methodological aspects of the EE survey research. In this section we discuss trends in survey methods and rationale for Internet collection. Section 2 describes sampling, demographic representativeness of respondents, and data collection methods. In Section 3 we describe data weighting methods and how the survey data are post-stratified to match the most recent US Census estimates. Section 4 reproduces the wording of questions and factual information provided to participants, and it compares central tendencies of responses to questions in the 2016 survey with weighted responses and central tendencies for the same questions in previous EE surveys collected between 2006 and 2015.

OPINION SURVEY RESEARCH VIA THE INTERNET

Technological developments and telecommunication trends, such as the declining number of land-line phones, the increasing use of cellular phones, and the continuing expansion of high speed Internet services, have made probabilistic (often referred to as "random") sampling of the US national population for the administration of lengthy surveys on complex issues infeasible for several reasons.

- The total universe of households without phone service of any kind is unknown
- Wired phone lines are no longer maintained in a sufficient fraction of US households to represent the national population, and members of households that do have land-line phone services differ systematically from households without wired phones
- The number of households with wired phones that are exclusively used for purposes *other than* routine phone calls, such as home alarms or medical alert services, is unknown
- The numbers of individuals and households having both a wired phone and a cell phone or those having more than one cell phone are unknown
- The numbers of households and individuals having access to Internet services suitable for taking web-based surveys is unknown
- The numbers of individuals who have access to Internet services from their workplace is unknown, and of those, the number of individuals who are allowed to take surveys while at work is unknown

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[1] The EE survey series differs from popular opinion polling. Polls tend to be snapshots of public opinions on subjects that more often can be categorized with yes—no, for—against responses, typically based on information that the person can recall from memory. By comparison, the EE series is designed to investigate more complex issues that (a) require much more attention and thought from respondents (as noted by the time respondents took to complete the survey), (b) involve more complex question wording, (c) may provide balanced background information, and (d) allow more subtle response variations (as shown in the sections that follow). The EE surveys yield data that can help explain which complex policy options are preferred, why these policy preferences are formed, and how they evolve over time related to the topic areas analyzed in the report.

[2] Alaska, Hawaii, and the District of Columbia were excluded because of a series of questions requiring respondents to assume that interim storage facilities for spent nuclear fuel were to be built in near proximity to their residence.

- Cell phones may be unsuitable for lengthy surveys, especially for respondents who are otherwise occupied, and surveys conducted using cell phones may incur costs to prospective respondents that might ultimately discourage survey participation or reduce the quality of data collected
- Face-to-face interviews or printed postal surveys of the U.S. public require long collection periods, often with low response rates, and are prohibitively expensive for many research projects

Increasingly, academic quality survey research of the U.S. public on complex subjects, such as energy and the environment, are being conducted via the Internet. The factors listed above present special challenges for probabilistic sampling due to incomplete information about rapidly evolving telecommunication patterns, Internet accessibility, and the demographic composition of those who have suitable Internet access.

With increasing Internet access, the demographics of the online population are becoming more representative of the U.S. population, but samples recruited to participate in Internet surveys cannot be truly random samples of the U.S. public. All surveys, regardless of collection methods, include an element of self-selection bias because even if a perfectly random sample could be constructed, the final decision to participate must be made voluntarily by each respondent, and thus some degree of self-selection is unavoidable. This means that, even when derived from a theoretically perfect random sample, the demographic characteristics of survey respondents may not perfectly reflect U.S. population parameters. Non-probabilistic samples, such as those used to administer surveys of the general public via the Internet, involve greater degrees of self-selection because participants first voluntarily agree to enter a pool of citizens willing to take surveys on-line, and then each member of that group must decide whether or not to participate in a given survey opportunity. This requires the administration of Internet surveys that are as demographically representative as possible, and it warrants caution in presenting findings as statistically representative of views of the entire adult U.S. population.

2. SAMPLING, DEMOGRAPHICS, AND DATA COLLECTION

The recruitment of survey participants was conducted by Survey Sampling International (SSI). Dynamix, the sampling method employed by SSI, provides access to multiple sources of survey respondents. For potential participants, SSI maintains 34 standing panels and has access to various online communities and social media. In addition, SSI utilizes affiliate programs and partnerships to develop an evolving stream of potential survey participants. Access to these different sources of participants maximizes the diversity of respondents. To ensure proportional representation, as the survey is conducted potential survey participants are pre-screened based on their demographic characteristics. The recruitment method employed increases the probability of survey engagement, reduces dropout rates, and allows prospects to take a survey at their convenience.

Dynamix is a dynamic sampling process employed by SSI that allows for real-time increased recruitment to balance overall survey participation. An underrepresented demographic is recruited from existing pools of respondents to bring the sample into closer balance with key population characteristics. The Dynamix system is a reliable method for recruitment of respondents. For example, if we assume a sample size of 1,000, the sample frame and selection process would achieve comparable results within +3% with 95% confidence (i.e., 19 times out of 20). A quality control verification process is utilized with all potential respondents before a survey is assigned. The quality control process includes external checks to avoid duplicate respondents as well as 3rd party identity validation. Once the quality control process is complete the respondent is anonymously assigned to the survey.

A variety of incentives from SSI or affiliate organizations are employed based on the nature, length of the survey and progress of the dynamic sampling process. This sampling process broadens access beyond standing panel memberships by including individuals who are not interested in joining a research panel and who may rarely choose to participate in online survey research. Regardless of the advantages of Dynamix or any other Internet sampling methodology, there are limits to a sample that is not based on random selection of individuals from the entire population. While the possibilities of systematic bias can be reduced to minimum levels to allow for replication of survey findings, the potential for bias cannot be eliminated entirely. One potential source of systematic bias that can be minimized is demographic representativeness.

Table 1 compares key national and regional population parameters to the demographic characteristics of respondents in the 2016 survey. Notice that households with higher incomes, especially house-holds with annual income of $200,000 or more, are slightly underrepresented, and educational attainment is higher among our respondents than for the national population. Nevertheless, the demographic attributes of respondents to the 2016 survey have a high level of comparability to national population demographic estimates.

To ensure the protection of our respondents, the survey questions and the survey protocol were approved by the Institutional Review Board of the University of Oklahoma. While SSI is responsible for the recruitment of respondents, the University of Oklahoma [CES&S] administers the survey and manages the data. The instrument was programmed to allow the survey to be self-administered at the preferred time and pace of each respondent within defined time constraints to maintain flexibility as well as data quality. To afford continuity of attention and to make the best use of factual information provided to each respondent during the course of the survey, a maximum of 45 minutes was allowed for completion of any single web page of the survey (typically containing one to three survey questions). A maximum total elapsed time of two hours from start to finish was allowed to complete the entire survey. Average completion time was 26 minutes. Participation was restricted to individuals 18 years of age or older. Each respondent who completed the survey received points credited by SSI or incentives from affiliates equal to a five-dollar stipend. Decisions to participate were entirely voluntary.

Table 1: Demographic Representativeness of Respondents in 2016

Demographic	% U.S. Population* 18 Years of Age and Above	% EE16 Respondents
Gender		
Female	51.3	50.5
Male	48.7	49.5
Age		
18–29	21.6	20.2
30–49	33.5	38.8
50+	44.9	41.0
Education		
High School Graduate or higher	86.8	96.4
Bachelor's Degree or higher	27.4	29.5
Ethnicity		
Hispanic	15.6	15.9
non-Hispanic	84.4	84.1
Race		
White	78.7	75.1
Black or African American	12.7	14.2
American Indian or Alaska Native	1.1	1.1
Asian	5.6	5.1
Native Hawaiian or Pacific Islander	0.2	0.1
Two or more races	1.7	2.6
Household Income		
$0–49,999	46.7	46.4
$50–99,999	29.8	27.9
$100–149,999	13.0	15.4
$150–199,999	5.1	6.8
$200,000 or more	5.3	3.4
Census Region		
Northeast	18.1	18.2
Midwest	21.3	21.7
South	37.6	37.5
West	23.0	22.6

* Calculations based on U.S. Census Population Estimates (July 1, 2015) and American Community Survey (2014 ACS 1-year estimates) – 48 States: Population estimates exclude Alaska, Hawaii, and District of Columbia.

3. DATA WEIGHTING

To preserve and leverage the value of legacy collections, to enhance the comparability of mixed-mode collections,[3] and to ensure demographic representativeness of the growing use of non-probabilistic sampling and Internet collections, we have developed data weighting methodologies that are described in this section. These weighting methodologies have been applied to all data collections in the EE survey series from 2006 through 2016. Weighting survey data to selected demographic characteristics of the general population (also known as sample balancing) provides three key analytical benefits:

- Representativeness, statistical validity, and reliability of findings are strengthened to the degree that responses from survey participants are adjusted to mirror the demographic characteristics of the U.S. general population at the time the survey is administered.
- The comparability of mixed-mode survey collections is strengthened because data weighting minimizes the demographic differences between phone (the most recent phone survey data was collected in 2011) and Internet respondents and improves the basis for their comparability and integration into combined datasets.
- The analysis of trends on issues tracked over time is strengthened because survey data are adjusted to represent continually evolving demographics of the U.S. population, such as the growth of ethnic and minority racial groups. This is especially valuable for understanding evolving public views on issues that may be influenced by shifts in national demographic characteristics.

We have employed a single-stage integrated method of post-stratification (as opposed to weighting in sequential stages) that requires the development of computer algorithms. The U.S. Census Bureau publishes annual population estimates that tabulate combined integrated estimates of (a) gender, (b) age, (c) race, (d) Hispanic ethnicity, and (e) state of residence. By appropriately grouping data for states (into four regions—Northeast, Midwest, South, and West), census region of residence becomes the fifth demographic available for the weighting method employed.

The weighting process involves three steps. The first step is to calculate for each survey respondent the proportion of the U.S. population for the survey year that shares the same demographic characteristics of gender, age, race, ethnicity, and region as the respondent. The second step is to calculate the proportion of fellow survey participants who share the same demographic characteristics as the respondent being weighted. Finally, the proportion of the national population sharing those demographic attributes is divided by the proportion of survey respondents sharing those same characteristics. The result is a weight factor that can be applied to responses from each individual survey participant to adjust them to national population characteristics. A weight of one means that responses from a specified participant are used without adjustment. A weight greater than one means that a participant with a given set of demographic attributes is underrepresented in the survey sample (relative to the national population), and responses from that participant receive greater statistical emphasis than responses from survey participants who are represented in direct proportion to the general population. Conversely, a weight smaller than one means that a respondent having a given set of demographic attributes is overrepresented in the survey sample (relative to the general population), and responses from that participant receive less emphasis than fellow respondents who are represented in direct proportion to the general population. We calculated weight factors to six decimals places. We show survey questions used in 2016 and compare weighted responses to those questions across previous surveys in Section 4.

[3] Surveys in this series conducted in 2006, 2008, 2010, and 2011 included both land-line phone and Internet collections for comparative purposes and for validating Internet collection methods.

4. WEIGHTED RESPONSES AND CENTRAL TENDENCIES: 2006–2016

e1_age How old are you? [unweighted]

	Mean	Median
2016 web	44.9	44
2015 web	48.2	51
2014 web	50.9	54
2013 web	44.3	43
2012 web	45.9	46
2011 combined web + phone	48.8	50
2010 combined web + phone	49	50
2009 web	45.3	45
2008 combined web + phone	46	45
2007 web	48.4	49
2006 combined web+ phone	47.3	47

e2_edu What is the highest level of education you have COMPLETED? [unweighted]

%	2016 web
1. < High school graduate	4
2. High school graduate/GED	30
3. Vocational or Technical Training (New)	5
4. Some College; NO degree	24
5. 2-year College / Associate's degree	8
6. Bachelor's Degree; Old College graduate	18
7. Master's degree	9
8. PhD / JD (Law) / MD	3

Question options and wording changed in 2016. Previous results:

%	2015 web	2014 web	2013 web	2012 web	2011 comb*	2010 comb	2009 web	2008 comb	2007 web	2006 comb
1. < High school graduate	1	2	2	1	3	2	2	1	1	2
2. High school graduate/GED	17	21	20	19	20	20	18	20	17	19
3. Some college/vocational school	33	33	34	34	33	36	37	34	35	35
4. College graduate	28	27	28	29	27	28	27	27	27	26
5. Some graduate work	5	5	5	5	5	4	6	5	7	5
6. Master's degree	13	10	9	9	9	8	7	11	10	10
7. Doctorate (of any type)	3	2	1	3	3	2	2	2	3	3

*The abbreviation "comb" refers to combined Internet and telephone surveys.

e3_gend Are you male or female? [unweighted]

	Female	Male
%	0	1
2016 web	50.5	49.5
2015 web	51.4	48.6
2014 web	54.6	45.4
2013 web	51.3	48.7
2012 web	51.0	49.0
2011 combined	51.4	48.6
2010 combined	50.8	49.2
2009 web	51.5	48.5
2008 combined	51.6	48.4
2007 web	50.9	49.1
2006 combined	52.2	47.8

e4_hisp Do you consider yourself to be Hispanic, Latino, or Spanish or to have Hispanic, Latino, or Spanish origins? [unweighted]

%	No	Yes
	0	1
2016-web	84	16
2015 web	84	15
2014 web	84	16
2013 web	86	14

e5_race Which of the following best describes your race? [unweighted]

%	White	Black	AI/AN	Asian	NH/PI	Two or More Races	Other Race
	1	2	3	4	5	6	7
2016 web	75	14	1	5	0	3	2
2015 web	78	13	1	5	0	2	0
2014 web	81	12	1	2	0	3	0
2013 web	78	13	1	4	0	3	0

e6_state Using the dropdown list, please select the state where your primary residence is located. [unweighted]

%	Northeast	Midwest	South	West
2016 web	18	22	37	23
2015 web	19	21	37	23
2014 web	18	21	38	23
2013 web	17	25	34	24
2012 web	19	23	34	24
2011 comb	18	23	36	23
2010 comb	19	26	35	20
2009 web	23	23	33	21
2008 comb	21	25	35	19
2007 web	18	28	33	21
2006 comb	19	27	32	22

e7_zip What is the five digit zip code at your residence? (This information will only be used to compare grouped differences, not to identify you.) [verbatim]

e8_now Please indicate which of the following statements applies to you. [unweighted]

0 – I am completing this survey from my primary residence.
1 – I am completing this survey from a location that is not my primary residence.

%	Primary Residence	Not Primary Residence
	0	1
2016 web	84	16
2015 web	87	13
2014 web	89	11
2013 web	87	13
2012 web	86	14

The next several questions are about important issues facing policy makers in the U.S. today.
For each of the following issues, please rate your level of concern about the issue using a scale from zero to ten, where zero means you are *not at all concerned* and ten means you are *extremely concerned*. How concerned are you about: [Random Order: e9_worry1—e11_worry3]

9_worry1 Threats to national security, including terrorism?

%	Not at All Concerned 0	1	2	3	4	5	6	7	8	9	Extremely Concerned 10	Mean
2016 web	1	1	1	2	2	5	6	11	15	15	42	8.27
2015 web	2	1	2	3	3	7	8	13	16	14	30	7.59
2014 web	1	1	2	2	2	7	8	12	18	14	33	7.83
2013 web	2	1	2	2	4	7	10	13	15	14	31	7.65
2012 web	2	1	2	4	5	9	10	13	16	13	26	7.31
2011 comb	1	1	2	3	4	#	9	14	16	12	28	7.48
2010 comb	1	1	1	4	2	9	8	13	17	12	31	7.67
2009 web	1	1	2	1	3	8	8	11	15	16	34	7.85
2008 comb	1	1	2	2	3	#	8	13	17	13	31	7.72
2007 web	0	1	1	2	3	7	9	14	18	16	29	7.87
2006 comb	1	0	1	2	3	9	7	12	18	14	33	7.84

(2016 vs. 2015 : $p < 0.001$)
(2015 vs. 2014 : $p = 0.01617$)

e10_worry3 The availability and cost of energy in the U.S.?

%	Not at All Concerned 0	1	2	3	4	5	6	7	8	9	Extremely Concerned 10	Mean
2016 web	2	1	1	3	4	10	9	17	18	15	22	7.38
2015 web	1	1	1	2	3	8	11	15	20	15	23	7.52
2014 web	0	0	1	1	1	8	7	12	21	14	34	8.13
2013 web	1	0	1	1	2	5	8	15	18	16	31	8.01
2012 web	1	0	1	1	2	5	7	14	19	18	32	8.13
2011 comb	1	0	1	1	2	6	7	13	23	17	30	8.09
2010 comb	1	1	1	2	2	8	8	17	18	14	29	7.82
2009 web	1	0	1	1	2	5	7	12	19	17	36	8.25
2008 comb	0	0	1	1	1	5	4	10	15	16	47	8.6
2007 web	0	0	1	1	1	6	6	12	20	18	34	8.26
2006 comb	1	0	1	1	1	7	6	13	20	16	35	8.2

(2016 vs. 2015: $p = 0.1132$)
(2015 vs. 2014: $p < 0.001$)
(2014 vs. 2013: $p = 0.1663$)

e11_worry5 The state of the economy, including jobs and inflation?

%	Not at All Concerned 0	1	2	3	4	5	6	7	8	9	Extremely Concerned 10	Mean
2016 web	1	0	1	2	2	6	7	12	18	18	33	8.05
2015 web	1	0	0	1	3	5	8	14	19	18	30	8.03
2014 web	0	0	0	1	1	4	5	10	18	18	42	8.6
2013 web	1	0	0	1	1	3	6	10	19	18	41	8.53
2012 web	1	0	0	1	1	3	4	9	14	20	48	8.78
2011 comb	0	0	0	0	1	4	4	10	16	17	47	8.74
2010 comb	1	1	0	1	2	4	4	9	17	17	45	8.59
2009 web	0	0	0	1	1	3	4	8	13	21	49	8.81
2008 comb	0	0	1	1	2	4	5	10	16	16	46	8.58
2007 web	1	0	1	2	2	8	9	13	21	16	27	7.83
2006 comb	1	0	2	2	2	8	8	15	19	14	29	7.77

(2016 vs. 2015: $p = 0.7794$)
(2015 vs. 2014: $p < 0.001$)
(2014 vs. 2013: $p = 0.3144$)

The next several questions ask about your views on energy and environmental issues. These questions concern your perceptions and beliefs, so don't worry about being right or wrong when providing your answers.

e12_nature On a scale from zero to ten, where zero means that nature is *robust and not easily damaged* and ten means nature is *fragile and easily damaged*, how do you view nature?

%	Robust and *Not* Easily Damaged 0	1	2	3	4	5	6	7	8	9	Fragile and Is Easily Damaged 10	Mean
2016 web	2	1	3	5	5	16	11	18	16	8	16	6.70
2015 web	3	1	4	5	4	17	11	18	17	8	13	6.48
2014 web	3	1	3	5	6	14	12	17	18	7	14	6.55
2013 web	2	1	3	7	6	14	12	17	15	7	15	6.45
2012 web	2	1	3	5	6	17	12	17	15	8	13	6.44
2011 web	2	1	5	6	7	16	10	16	17	7	13	6.38
2010 web	3	2	5	6	7	15	10	15	14	7	17	6.39
2009 web	3	2	3	5	6	14	12	16	15	7	17	6.48
2008 comb	2	1	3	6	6	16	10	15	16	7	18	6.58
2007 web	1	1	3	4	6	15	12	18	17	9	14	6.68
2006 comb	2	1	2	4	5	14	10	15	16	10	21	6.99

(2016 vs. 2015: $p = 0.0228$)
(2015 vs. 2014: $p = 0.5313$)
(2014 vs. 2013: $p = 0.3256$)

As you may know, the issue of global climate change has been the subject of public discussion over the last few years.

e13_gcc In your view, are greenhouse gases, such as those resulting from the combustion of coal, oil, natural gas, and other materials causing average global temperatures to rise?

%	Are Not 0	Are 1
2016 web	25	75
2015 web	25	75
2014 web	24	76
2013 web	27	73
2012 web	28	72
2011 comb	30	70
2010 comb	33	67

2009 web	26	74
2008 comb	26	74
2007 web	23	77
2006 comb	24	76

e14_gcccert On a scale from zero to ten, where zero means *not at all certain* and ten means *completely certain*, how certain are you that greenhouse gases <are/are not> (from e13) causing average global temperatures to rise?

	Not at All Certain										Extremely Certain	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	2	1	2	3	4	14	13	16	16	10	19	6.98
2015 web	3	1	2	3	4	13	11	16	17	11	18	7.01
2014 web	3	1	2	3	4	17	11	18	15	10	16	6.8
2013 web	2	1	1	4	5	14	12	19	18	9	15	6.87
2012 web	3	1	1	4	3	15	14	20	18	8	13	6.76
2011 comb	4	2	3	4	5	18	14	17	16	7	11	6.32
2010 comb	3	1	3	4	5	17	12	14	17	8	15	6.6
2009 web	3	1	2	4	5	18	11	17	17	8	14	6.58
2008 comb	3	1	2	5	5	16	14	17	16	8	12	6.45
2007 web	3	1	2	4	5	18	14	16	17	9	11	6.5
2006 comb	3	1	2	4	3	14	11	16	20	10	17	6.96

(2016 vs. 2015: $p = 0.7595$)
(2015 vs. 2014: $p = 0.03855$)
(2014 vs. 2013: $p = 0.4430$)

e15_gccrsk On the scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how much risk do you think global warming poses for people and the environment?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	3	1	3	3	3	11	9	15	17	11	24	7.15
2015 web	3	2	3	4	4	9	9	14	16	12	24	7.08
2014 web	3	2	2	3	4	12	9	14	18	12	22	7.08
2013 web	4	2	2	4	4	12	11	15	16	10	20	6.8
2012 web	3	2	3	4	5	12	12	15	16	10	18	6.75
2011 comb	5	2	3	6	4	12	10	15	17	10	17	6.57
2010 comb	5	2	5	4	4	12	10	13	18	9	18	6.53
2009 web	3	2	4	4	5	11	12	15	16	9	19	6.74
2008 comb	3	2	3	4	4	13	10	15	16	8	21	6.84
2007 web	2	1	3	3	2	11	13	13	18	11	23	7.17
2006 comb	3	1	3	4	4	10	10	14	18	11	22	7.07

(2016 vs. 2015: $p = 0.5288$)
(2015 vs. 2014: $p = 0.9592$)
(2014 vs. 2013: $p = 0.0108$)

Start SPLIT DESIGN A/B: Comparing future energy preferences by categories

GROUP-A (50%): Total energy

Now think about the overall mix of all sources of energy for the U.S. We currently get about 80 percent of our energy from *fossil fuels*, 9 percent from *nuclear energy*, and 11 percent from *renewable sources* (hydroelectric dams, wood, biofuels, wind, waste products, geothermal, and solar). We want to know approximately what percentage of the total U.S. energy supply over the next 20 years you would like to see come from each of these three primary sources. NOTE: the sum of all the three boxes below must equal 100. [Random Order: e16A_foss—e18A_renew; must sum to 100%]

e16A_foss What percent of our energy should come from fossil fuels, which currently provide about 80% of total U.S. energy? [verbatim]

%	Fossil Fuels (Mean)
2016 web-A	33.6
2015 web-A	34.7
2014 web-A	36.6
2013 web-A	34.7
2012 web	N/A
2011 web	36
2010 web	33.6
2009 web	25
2008 comb	27
2007 web	25.3
2006 comb	29

e17A_nuc What percent of our energy should come from nuclear energy, which currently provides about 9% of total U.S. energy? [verbatim]

%	Nuclear (Mean)
2016 web-A	16.5
2015 web-A	15.4
2014 web-A	15.3
2013 web-A	16.1
2012 web	N/A
2011 web	17.2
2010 web	19.6
2009 web	22.8
2008 comb	22
2007 web	22.6
2006 comb	21.7

E18A_renew What percent of our energy should come from renewable sources (hydroelectric dams, wood, biofuels, wind, waste products, geothermal, and solar), which currently provide about 11% of total U.S. energy? [verbatim]

%	Renewables (Mean)
2016 web-A	49.9
2015 web-A	49.9
2014 web-A	48.1
2013 web-A	49.2
2012 web	N/A
2011 web	46.8
2010 web	46.8
2009 web	52.2
2008 comb	51
2007 web	52.1
2006 comb	49.3

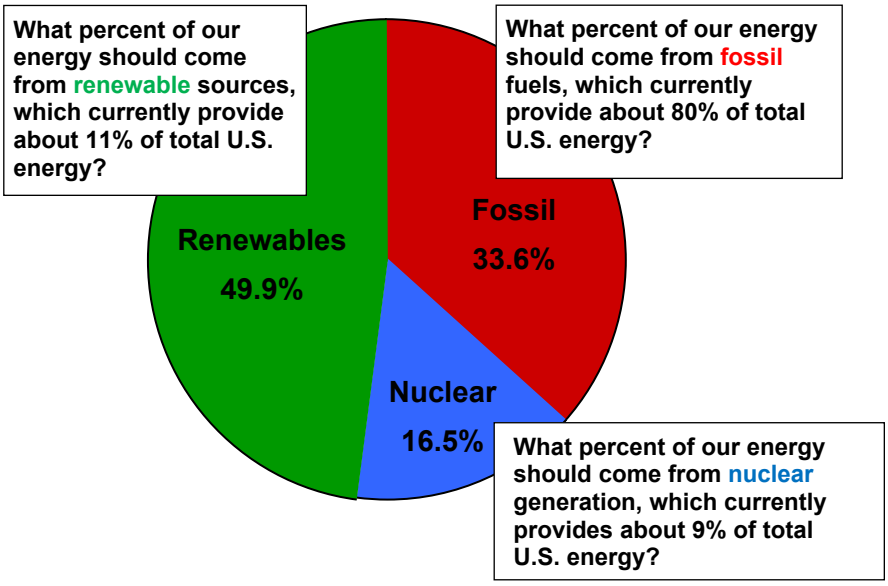

Figure 1: Preferred Sources of Total U.S. Energy Over the Next 20 Years in 2015

GROUP-B (50%): Total Electricity

Now think about the overall mix of all sources of electricity for the U.S. We currently get about 67 percent of our electricity from *fossil fuels*, 19 percent from *nuclear energy*, and 14 percent from *renewable sources* (hydroelectric dams, wood, wind, biofuels, waste products, geothermal, and solar). We want to know approximately what percentage of the total U.S. electricity supply over the next 20 years you would like to see come from each of these three primary sources. NOTE: the sum of all the three boxes below must equal 100.[Random Order: e16B_foss—

e18B_renew; must sum to 100%]

e16B_foss What percent of our electricity should come from fossil fuels, which currently provide about 67% of total U.S. electricity? [verbatim]

%	Fossil Fuels (Mean)
2016 web-B	30.6
2015 web-B	28
2014 web-B	28.3
2013 web-B	27.1

e17B_nuc What percent of our electricity should come from nuclear energy, which currently provides about 19% of total U.S. electricity? [verbatim]

%	Nuclear (Mean)
2016 web-B	21.3
2015 web-B	21.6
2014 web-B	20.4
2013 web-B	21

E18B_renew What percent of our electricity should come from renewable sources (hydroelectric dams, wood, biofuels, wind, waste products, geothermal, and solar), which currently provide about 14% of total U.S. electricity? [verbatim]

%	Other Renewables (Mean)
2016 web-B	48.1
2015 web-B	50.4
2014 web-B	51.3
2013 web-B	51.9

END SPLIT A/B

The next set of questions focus specifically on the possible risks and benefits of nuclear energy.

First we want to know about your beliefs concerning some of the possible *risks* associated with nuclear energy use in the U.S. Please consider both the likelihood of a nuclear event occurring and its potential consequences when evaluating the risk posed by each of the following on a scale from zero to ten, where zero means *no risk* and ten means *extreme risk*. [Random Order: e19_nrsk1—e22_nrsk4]

e19_nrsk1: An event at a U.S. nuclear power plant within the next 20 years that results in the release of large amounts of radioactivity

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	2	2	5	4	5	10	10	14	15	10	23	6.93
2015 web	1	5	5	6	5	12	10	14	13	9	20	6.55
2014 web	1	4	6	5	5	11	8	14	13	10	23	6.81
2013 web	1	4	5	6	6	11	8	14	13	10	21	6.68
2012 web	1	5	7	7	6	11	10	12	12	10	19	6.43
2011 web	1	5	6	6	6	11	9	12	13	9	21	6.55
2010 web	2	5	7	7	6	13	10	10	11	11	19	6.27
2009 web	2	7	6	7	4	13	9	10	12	9	21	6.32
2008 comb	3	6	7	7	6	13	7	13	11	7	20	6.14
2007 web	1	5	7	6	7	14	11	11	12	8	18	6.24
2006 comb	2	5	7	7	6	15	8	9	11	7	22	6.19

(2016 vs. 2015: $p < 0.001$)
(2015 vs. 2014: $p = 0.02992$)
(2014 vs. 2013: $p = 0.2778$)

*****SPLIT DESIGN C/D: Risk from transportation vs. storage of SNF**

GROUP-C (50%): Risks from transportation of SNF

e20C_nrsk2: An event during the transportation of spent nuclear fuel from nuclear power plants in the U.S. within the next 20 years that results in the release of large amounts of radioactivity

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	2	2	5	4	4	12	10	14	15	11	20	6.83
2015 web	2	4	6	7	6	13	10	12	16	7	16	6.25

(2016 vs. 2015: $p < .001$)

GROUP-D (50%): Risks from storage of SNF

e20D_nrsk2: An event during the temporary storage of spent nuclear fuel at or near nuclear power plants in the U.S. within the next 20 years that results in the release of large amounts of radioactivity

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	1	3	6	5	4	11	11	13	14	9	22	6.76
2015 web	1	3	9	5	4	11	11	13	13	9	21	6.51

(2016 vs. 2015: $p = 0.1307$)

END SPLIT C/D

e21_nrsk3: A terrorist attack at a U.S. nuclear power plant within the next 20 years that results in the release of large amounts of radioactivity.

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	1	1	3	4	4	8	9	12	15	12	30	7.44
2015 web	1	3	5	5	5	13	8	12	14	11	23	6.83
2014 web	1	3	4	5	5	11	8	12	13	11	27	7.06
2013 web	1	3	5	5	5	10	9	13	15	10	24	6.93
2012 web	2	4	5	6	5	14	10	13	11	9	21	6.57
2011 web	1	3	5	6	6	10	9	12	13	10	24	6.84
2010 web	2	3	4	5	5	14	8	12	13	10	24	6.79
2009 web	1	4	6	6	5	13	7	10	14	9	25	6.69
2008 comb	2	4	6	6	6	12	10	11	12	8	23	6.52
2007 web	1	2	4	5	5	12	10	13	13	12	23	6.92
2006 comb	2	3	4	5	6	12	9	11	12	9	27	6.9

(2016 vs. 2015: $p < .001$)
(2015 vs. 2014: $p = 0.05747$)
(2014 vs. 2013: $p = 0.2710$)

e22_nrsk4: The diversion of nuclear fuel from a nuclear power plant in the U.S. within the next 20 years for the purpose of building a nuclear weapon.

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	3	4	6	5	5	12	10	12	14	9	20	6.44
2015 web	4	6	7	7	5	13	10	12	12	8	16	5.99
2014 web	5	4	6	6	5	14	10	10	11	10	18	6.14
2013 web	3	7	7	7	5	13	9	13	11	8	16	5.95
2012 web	4	7	8	7	6	14	9	12	11	6	15	5.68
2011 web	3	7	8	7	7	13	9	12	9	7	17	5.79
2010 web	4	7	7	7	8	14	9	10	10	8	15	5.75
2009 web	6	7	7	6	7	15	10	10	8	8	17	5.73
2008 comb	5	7	7	8	6	14	9	13	10	5	17	5.72
2007 web	4	5	9	7	8	14	11	9	12	7	13	5.71
2006 comb	5	6	8	8	6	15	8	9	9	6	19	5.81

(2016 vs. 2015: $p < .001$)
(2015 vs. 2014: $p = 0.2711$)
(2014 vs. 2013: $p = 0.1522$)

Next we want to know about your beliefs concerning some of the possible *benefits* associated with nuclear energy use in the U.S. Please evaluate the benefits associated with each of the following on a scale from zero to ten, where zero means *not at all beneficial* and ten means *extremely beneficial.*
[Random Order: e23_nben1—e26_nben5]

*****SPLIT DESIGN E/F: Testing language variation**

GROUP-E (50%): Reducing environmental threats

e23E_nben1: Reducing environmental threats because the generation of nuclear energy produces much less of the greenhouse gases that are believed to cause climate change

	Not At All Beneficial										Extremely Beneficial	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	3	2	3	4	5	14	11	16	16	9	18	6.75
2015 web	2	2	2	3	5	15	11	18	15	10	17	6.79
2014 web	3	1	4	3	4	13	12	15	16	10	19	6.82
2013 web	2	2	2	3	5	16	12	15	16	12	15	6.8
2012 web	2	1	2	3	6	16	11	16	16	12	15	6.81
2011 web	2	2	2	4	5	17	11	15	16	11	16	6.74
2010 web	2	1	2	3	5	14	10	13	16	13	20	7.04
2009 web	3	1	2	3	4	14	10	13	16	12	23	7.14
2008 comb	2	1	2	2	6	17	10	13	17	9	22	7
2007 web	1	0	0	2	4	15	13	17	16	13	19	7.24
2006 comb	3	1	2	2	4	15	10	13	19	10	21	7.03

(2016E vs. 2015: $p = 0.7242$)
(2015 vs. 2014: $p = 0.7537$)
(2014 vs. 2013: $p = 0.8392$)

GROUP-F (50%): Reducing 'global' environmental threats

e23F_nben1: Reducing global environmental threats because the generation of nuclear energy produces much less of the greenhouse gases that are believed to cause climate change

	Not At All Beneficial										Extremely Beneficial	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	4	1	2	4	4	15	10	16	15	12	17	6.8

(2016F vs. 2015: $p = 0.9163$)
(2016E vs. 2016F: $p = 0.6898$)

*****END SPLIT E/F*****

e24_nben2: Reliable power because nuclear energy generates large amounts of electricity and is not affected by weather conditions, such as low rainfall or no wind

	Not At All Beneficial										Extremely Beneficial	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	3	1	2	3	5	13	11	15	17	12	17	6.91
2015 web	2	1	2	3	5	13	12	16	18	10	19	7.01
2014 web	2	1	3	3	4	13	11	13	17	12	21	7.07
2013 web	2	1	2	3	4	14	11	15	19	13	16	6.95
2012 web	2	1	2	4	5	15	11	16	16	12	16	6.93
2011 web	2	1	2	3	6	15	11	15	17	11	17	6.91
2010 web	2	1	1	2	5	14	9	13	17	13	22	7.2
2009 web	1	2	1	2	4	14	10	15	16	13	23	7.27
2008 comb	2	1	1	2	5	13	11	13	17	10	24	7.2
2007 web	1	0	1	1	3	14	12	19	17	14	18	7.31
2006 comb	2	1	2	3	3	12	10	16	18	11	22	7.22

(2016 vs. 2015: $p = 0.3017$)
(2015 vs. 2014: $p = 0.5744$)
(2014 vs. 2013: $p = 0.2747$)

e25_nben3: Greater U.S. energy independence because nuclear energy production does not require oil or gas from foreign sources.

%	Not At All Beneficial 0	1	2	3	4	5	6	7	8	9	Extremely Beneficial 10	Mean
2016 web	3	1	2	3	5	13	9	14	17	13	20	7.04
2015 web	2	1	2	3	5	12	11	15	17	11	21	7.09
2014 web	3	1	2	3	2	13	10	12	15	13	25	7.22
2013 web	2	1	2	2	4	12	11	14	17	13	21	7.22
2012 web	2	1	2	3	5	13	10	16	15	13	20	7.1
2011 web	2	1	2	3	5	12	10	15	16	12	21	7.09
2010 web	2	1	1	2	5	13	9	13	17	12	25	7.37
2009 web	1	1	2	2	4	13	9	12	16	14	26	7.43
2008 comb	2	1	1	1	4	13	9	15	16	10	27	7.33
2007 web	1	0	1	1	2	16	9	16	18	14	22	7.47
2006 comb	2	1	2	2	2	14	9	13	20	11	24	7.31

(2016 vs. 2015: $p = 0.5721$)
(2015 vs. 2014: $p = 0.2748$)
(2014 vs. 2013: $p = 0.9741$)

SPLIT DESIGN G/H: Testing new language
GROUP-G (50%): Reducing environmental damage w/o mention of fracking

e26_nben4: Reduced environmental damage because of less need for mining coal or extracting oil and gas.

%	Not At All Beneficial 0	1	2	3	4	5	6	7	8	9	Extremely Beneficial 10	Mean
2016 web	2	1	2	3	4	13	9	13	16	14	22	7.18
2015 web	2	1	2	3	4	12	12	14	17	12	20	7.1
2014 web	2	2	4	4	4	13	11	13	15	13	21	6.95
2013 web	2	1	2	3	5	13	11	15	17	13	17	7.02
2012 web	2	1	3	4	5	15	10	17	15	12	15	6.81
2011 web	2	1	2	3	5	14	11	18	16	11	17	6.85
2010 web	2	1	2	3	6	12	11	14	16	11	22	7.06
2009 web	2	1	2	2	5	14	10	13	15	13	24	7.21
2008 comb	2	1	2	2	5	14	10	15	17	10	22	7.1
2007 web	1	0	1	2	3	15	10	17	19	13	19	7.33
2006 comb	2	1	2	3	4	15	11	14	17	9	22	7.03

(2016G vs. 2015: $p = 0.4657$)
(2015 vs. 2014: $p = 0.1723$)
(2014 vs. 2013: $p = 0.5285$)

GROUP-H (50%): Reducing environmental damage w/ mention of fracking
e26H_nben4: Reduced environmental damage because of less need for strip mining coal, or extracting oil and gas including methods such as hydraulic fracturing

%	Not At All Beneficial 0	1	2	3	4	5	6	7	8	9	Extremely Beneficial 10	Mean
2016 web	4	2	4	4	5	14	8	14	17	11	18	6.69

(2016H vs. 2015: $p < 0.001$)
(2016H vs. 2016G: $p < 0.001$)

*****END SPLIT G/H*****

Now please consider the overall balance of these possible risks and benefits of nuclear energy in the U.S.

e27_rskben: Using a scale from one to seven, where one means the risks of nuclear energy far outweigh its benefits, four means the risks and benefits are equally balanced, and seven means the benefits of nuclear energy far outweigh its risks, how do you rate the overall balance of the risks and benefits of nuclear energy in the U.S.? Remember, you can choose any number from one to seven.

	Risks > Benefits			Risks/Benefits Balanced			Benefits > Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	8	7	16	29	20	12	7	4.12
2015 web	7	7	18	27	21	12	7	4.14
2014 web	8	#	15	27	19	13	8	4.09
2013 web	7	8	18	30	19	12	6	4.06
2012 web	5	8	15	35	19	10	7	4.11
2011 comb	7	6	14	30	19	13	11	4.29
2010 comb	6	6	11	29	19	13	16	4.53
2009 web	7	5	13	32	18	13	12	4.39
2008 comb	6	5	12	32	18	13	14	4.48
2007 web	4	4	11	35	21	15	10	4.52
2006 comb	7	6	10	29	21	13	13	4.41

(2016 vs. 2015: $p = 0.8318$)
(2015 vs. 2014: $p = 0.515$)
(2014 vs. 2013: $p = 0.6666$)

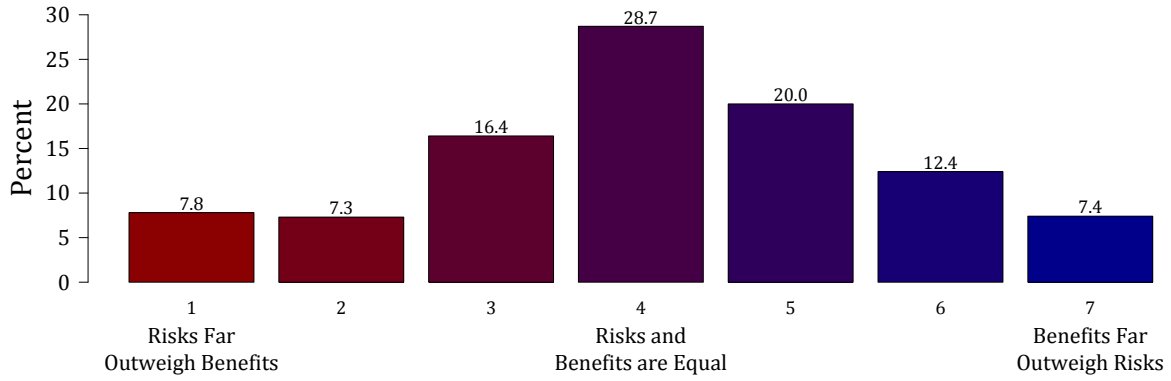

Figure 2: Perceived Balance of Nuclear Energy Risks and Benefits in 2016.

e28G_new1: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about constructing additional nuclear reactors at the sites of existing nuclear power plants in the U.S.?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
2016 web	14	9	14	25	20	10	8	3.88
2015 web	13	10	16	23	19	10	9	3.91
2014 web	14	9	16	22	20	10	9	3.9
2013 web	13	10	15	24	20	7	10	3.9
2012 web	11	9	15	27	19	10	8	3.96
2011 comb	15	8	15	22	19	10	12	3.99

2010 comb	11	7	9	21	19	14	19	4.47
2009 web	11	7	9	24	18	13	18	4.41
2008 comb	11	7	12	23	19	11	17	4.33
2007 web	7	7	12	25	21	16	12	4.45
2006 comb	14	7	10	18	19	14	18	4.31

(2016 vs. 2015: $p = 0.6848$)
(2015 vs. 2014: $p = 0.9498$)
(2014 vs. 2013: $p = 0.9350$)

e29G_new2: Using the same scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about constructing additional nuclear power plants at new locations in the U.S.?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
2016 web	18	12	15	21	17	10	7	3.64
2015 web	17	14	15	20	18	8	9	3.64
2014 web	18	12	16	16	19	9	9	3.7
2013 web	17	12	15	22	17	7	10	3.72
2012 web	15	11	15	22	18	10	9	3.82
2011 comb	19	10	14	18	17	10	12	3.79
2010 comb	15	9	10	20	16	12	18	4.22
2009 web	14	8	10	21	16	13	18	4.3
2008 comb	13	9	12	21	18	11	17	4.2
2007 web	8	9	13	22	20	14	14	4.32
2006 comb	20	9	11	18	14	11	17	3.99

(2016 vs. 2015: $p = 0.9993$)
(2015 vs. 2014: $p = 0.5180$)
(2014 vs. 2013: $p = 0.7987$)

e30_near: To the best of your knowledge, is your primary residence located within approximately 100 miles of an operating nuclear power plant?

	No	Yes	Don't Know		
%	0	1	2	Correct	Incorrect/DK
2016 web	40	30	31	56	44
2015 web	39	31	29	55	45
2014 web	42	29	29	45	55
2013 web	42	31	27	47	53
2012 web	42	23	35	45	55
2011 web	46	34	20	N/A	N/A
2010 web	44	32	24	N/A	N/A

e31_disp: As nuclear fuel is used to generate electricity, it becomes contaminated with radioactive byproducts. When it can no longer efficiently produce electricity, it is called "spent" nuclear fuel. To the best of your knowledge, what is currently being done with most of the spent nuclear fuel produced in the U.S.? [response options randomly ordered]

%	2016 Web	2015 Web	2014 Web	2013 Web	2012 Web	2011 Comb	2010 Comb	2009 Comb	2008 Comb	2007 Web	2006 Comb
1. Stored in cooling pools or special containers at nuclear power plants throughout the U.S.	38	34	35	39	39	41	32	25	23	24	22
2. Shipped to Nevada and stored in a facility deep underground	21	29	24	23	22	25	29	32	34	30	36
3. Chemically reprocessed and reused	19	15	17	15	15	12	15	17	16	14	13
4. Shipped to regional storage sites	22	22	24	23	24	23	24	26	27	32	29

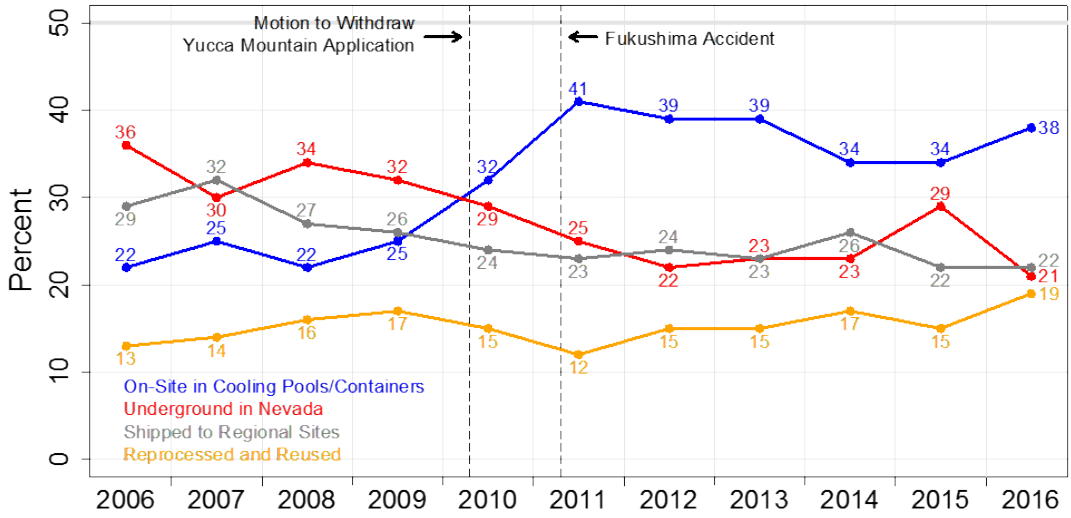

Figure 3: Trends in Public Knowledge of Current SNF Policy in the U.S.

Now we need to provide essential information for you to consider before answering additional questions. We ask that you read the following three paragraphs carefully.

Spent nuclear fuel is highly radioactive and must be safeguarded for thousands of years or chemically reprocessed, which is not economically feasible in the U.S. today. In 2010, the government halted construction of a deep underground facility inside Yucca Mountain in Nevada that had been intended for permanent storage and disposal of spent nuclear fuel.

Currently, spent nuclear fuel in the U.S. is stored at more than 100 temporary storage sites in 39 states. This spent fuel is stored in cooling pools "on-site" at nuclear power plants and decommissioned facilities. The government is trying to decide whether this spent fuel should continue to be stored on-site, or whether it should be transported to interim storage facilities until a permanent repository can be constructed.

e32_UNFprox: To the best of your knowledge, is your primary residence located within approximately 100 miles of a site where spent nuclear fuel is being stored?

	No	Yes	Don't Know		
%	0	1	2	Correct	Incorrect/DK
2016-web	36	13	51	22	78
2015 web	36	12	52	23	77
2014 web	37	13	50	25	75

Key arguments that are made FOR current "on-site" storage practices include the following: [code as "FOR ON-SITE"] [Random order for grouped sets of bulleted arguments] NOTE: wording was changed in 2014

- Keeping the spent nuclear fuel "on-site" at current facilities would eliminate the risks associated with transportation of this spent fuel to interim storage facilities or permanent storage and disposal facilities.
- In the near term, storing spent nuclear fuel "on-site" at or near nuclear facilities is less expensive than building interim storage facilities or permanent storage and disposal facilities.
- Current storage at nuclear power plants has not caused any accidents that have exposed the U.S. public to radiation, and with significant investment, current storage sites can be made safer from terrorists and other threats such as flooding.

Key arguments that are made AGAINST continuing to rely on "on-site" storage practices include the following: [code as "AGAINST ON-SITE"]

- Some "on-site" storage facilities are located near rivers and oceans where flooding is possible, and some are near large population centers, making many U.S. residents vulnerable in the event of a significant radiation leak.
- Large volumes of these materials are accumulating that require costly maintenance and security; yet current practices do not provide a permanent solution.
- Some nuclear power plants have been dismantled or shut down, resulting in "stranded" spent nuclear fuel at multiple locations in the U.S. Interim storage facilities or permanent disposal facilities would help consolidate this stranded spent fuel.

e33_info_onsite: When thinking about the information provided on this page, would you say that you…

	Learned something new	Already knew the information	Don't understand the information
%	1	2	3
2016	83	14	4

e34_opt1: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the current practice of storing spent nuclear fuel at or near nuclear power plants for the next (e34_opt1_rand: 10, 20, 50) years?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
2016 web-all	12	9	16	32	19	7	5	3.77
2016 web-10	13	10	15	33	18	6	5	3.75
2016 web-20	12	8	17	31	22	6	4	3.78
2016 web-50	12	8	17	31	18	8	5	3.80
2015 web	11	12	19	32	17	5	3	3.6
2014 web	14	11	18	31	16	6	4	3.57
2013 web	13	13	23	29	15	4	3	3.44

2012 web	12	12	21	31	16	5	3	3.53
2011 web	14	12	22	29	16	5	2	3.42
2010 web	12	11	17	33	18	5	4	3.68
2009 web	13	10	23	30	15	4	5	3.56
2008 comb	14	12	19	29	15	5	6	3.58
2007 web	10	10	20	37	16	4	3	3.62
2006 comb	16	9	19	26	17	6	7	3.66

(2016 vs. 2015: $p = 0.0030$)
(2015 vs. 2014: $p = 0.5833$)
(2014 vs. 2013: p = 0.0500)

Spent fuel is stored at multiple locations through the country and you can see the big picture by looking at this map showing where spent nuclear fuel is currently being stored in the U.S.

[map of U.S. storage sites shown here]

Based on the location information you provided, your primary residence is approximately [insert estimate] miles (straight line; distance estimated from provided zip code) from the nearest nuclear facility where spent nuclear fuel currently is in temporary storage.

e35_dist: Given your prior expectations, would you say that the distance between the nearest facility where spent nuclear fuel is being stored and your primary residence is:

	Less than Expected	About what Expected	Mort than Expected
%	1	2	3
2016 web	42	37	21
2015 web	39	41	20

*****SPLIT J/K/L: testing interim storage facility (ISF) vs. deep geologic repository (DGR) vs. integrated system*****
Track J (33%): ISF option

Though operating nuclear power plants will continue to store some spent nuclear fuel "on-site," much of the radioactive materials currently at more than 99 temporary storage facilities in 30 states could be consolidated at a smaller number of facilities. One option the government is considering is building one or more interim storage facilities to consolidate the spent nuclear fuel from these temporary sites. Spent fuel would be shipped, primarily by train, from "on-site" storage to the new interim storage facilities. These facilities could be built in the next 10-15 years, where the spent nuclear fuel could be better secured, monitored, and repackaged while the government decides on a permanent disposal strategy. These interim sites would meet all technical and safety requirements set by the U.S. Nuclear Regulatory Commission, the U.S. Environmental Protection Agency, and state regulatory agencies.
[Randomize "for" and "against" sets, but do not randomize order within sets of bulleted arguments]

Key arguments that are made FOR siting interim storage facilities include the following: [code as "FOR ISF"]

- Supporters argue that interim facilities can be constructed relatively soon (within 10-15 years) to safely store spent nuclear fuel, allowing more time for the government to decide on a permanent disposal strategy.
- Interim facilities would allow removal of "stranded" spent nuclear fuel from a number of sites and eventually other sites where nuclear reactors have been dismantled or shut down, and for which

expensive security measures must be continued to protect the stored nuclear materials. Supporters argue that these savings could partially pay for constructing the interim storage facilities.

- Interim storage facilities would consolidate much of the growing amount of spent nuclear fuel currently being stored at or near nuclear power plants, many of which are near large population centers, rivers, and oceans. Also, interim facilities could repackage the spent nuclear fuel into more durable containers for eventual shipment to permanent storage and disposal sites.

Key arguments that are made AGAINST building interim storage facilities include the following: [code as "AGAINST ISF"]

- Opponents argue that expanding current "on-site" storage practices at or near operating and shut down nuclear power plants is cheaper and politically more acceptable than siting and building consolidated interim storage facilities.
- Opponents argue that transporting spent nuclear fuel to interim sites will pose greater risks than continuing temporary storage at the sites of operating or dismantled nuclear power plants. They argue that the spent fuel should be moved only after the government has succeeded in siting and building a permanent disposal facility, so the spent fuel would only need to be shipped one time rather than twice.
- Opponents argue that building interim facilities will delay the more politically difficult solution of siting and building permanent storage and disposal facilities. If the government is unable to site a permanent disposal facility, the spent fuel would be stranded at the interim facilities even though they are not intended to be permanent storage sites.

e36J_info_isf: When thinking about the information provided on this page, would you say that you…

	Learned something new	Already knew the information	Don't understand the information
%	1	2	3
2016	85	10	4

e37J_intspt: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about siting and constructing one or more interim storage facilities for consolidating spent nuclear fuel in the U.S.?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
2016 web	9	8	16	34	18	9	6	3.98
2015 web	8	8	13	32	24	9	6	4.1
2014 web	10	8	15	27	23	11	7	4.04
2013 web	7	8	15	28	25	10	7	4.15

(2016 vs. 2015: $p = 0.1619$)
(2015 vs. 2014: $p = 0.4249$)
(2014 vs. 2013: $p = 0.0993$)

Track K (33%): DGR option

Though nuclear power plants will continue to store some spent nuclear fuel "on-site," much of the radioactive materials currently at more than 99 temporary storage facilities in 30 states could be consolidated and permanently secured at one or more spent fuel disposal sites. To accomplish this, the government is considering siting and building a permanent storage and disposal facility, which could be completed in the next several decades (with the possibility of additional permanent disposal facilities in the future). Spent nuclear fuel would be shipped, primarily by train, to the facility, where it would be stored in special containers up to several thousand feet deep underground. The permanent storage and disposal facility would meet all technical and safety requirements set by the U.S. Nuclear Regulatory Commission, the U.S. Environmental Protection Agency, and state regulatory agencies. [Random order "for" and "against" sets; do not randomize bulleted arguments within sets]

Key arguments that are made FOR a permanent storage and disposal facility include the following: [code as "FOR DGR"]

- Supporters argue that a permanent storage and disposal facility would provide a safe, secure, and permanent solution for the disposal of spent nuclear fuel. The facility would be designed to ensure that the spent fuel will be permanently isolated away from people and the environment.
- The permanent disposal facility would consolidate the growing amount of spent nuclear fuel currently being stored at nuclear power plants, many of which are near large population centers, rivers, and oceans. The permanent facility would be built away from large population centers, rivers, and oceans.
- Supporters argue that a permanent disposal facility would provide a cost-effective way for disposing of spent nuclear fuel. Radioactive materials can be isolated for thousands of years using a combination of engineered (containers and structures) and natural barriers (rock, salt, or clay), leaving no burden or obligation for future generations to actively maintain the facility.

Key arguments that are made AGAINST a permanent storage and disposal facility include the following: [code as "AGAINST DGR"]

- The permanent disposal facility would take several decades to site and construct. In the meantime, the spent fuel would remain in "on-site" storage, where it is vulnerable to risks such as flooding or terrorism. Opponents also argue that there are high risks from transporting radioactive materials to a permanent storage and disposal site.
- Opponents argue that unless some of the spent nuclear fuel is repackaged into containers that are specifically engineered for disposal, designing a facility that can permanently dispose of all the current and future stock of spent fuel will be extremely difficult.
- Opponents argue that we can never be completely certain that radioactive materials would not leak into the ground from the disposal facility, potentially exposing people and the environment to these materials. For that reason, siting the permanent disposal facilities may generate opposition by nearby local communities and states.

e36K_info_dgr: When thinking about the information provided on this page, would you say that you…

	Learned something new	Already knew the information	Don't understand the information
%	1	2	3
2016	87	10	3

e37K_repspt: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about siting and constructing a permanent storage and disposal facility for consolidating spent nuclear fuel in the U.S.?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
2016 web	7	6	12	26	25	15	10	4.41

Track L (33%): Integrated systems option

Though nuclear power plants will continue to store some spent nuclear fuel "on-site," much of the radioactive materials currently at more than 99 temporary storage facilities in 30 states could be consolidated and disposed of at a smaller number of facilities. To accomplish this, the government is considering an integrated storage and disposal system.

The integrated storage and disposal system consists of the following elements:

1. One or more interim storage facilities that would first accept fuel from shut down commercial reactor sites, and then from other temporary "on-site" storage facilities at or near operating nuclear power plants, and;
2. A permanent storage and disposal facility (and possibly more in the future) that would be sited and constructed to permanently isolate spent nuclear fuel from people and the environment.

An integrated system is intended to coordinate safe and efficient repackaging, transportation, and disposal of spent nuclear fuel: the interim storage facilities would be constructed first to consolidate spent fuel currently stored at multiple sites across the country. These interim sites would have capabilities for repackaging the spent fuel into more durable containers that are specifically engineered to prepare them for permanent disposal. At the same time, the selection for the site of a permanent disposal facility would begin, which could take several decades. Once the site is selected, the permanent disposal facility would be constructed to consolidate, store, and permanently secure the spent nuclear fuel. Both interim and permanent disposal facilities would meet all technical and safety requirements set by the U.S. Nuclear Regulatory Commission, the U.S. Environmental Protection Agency, and state regulatory agencies. [Randomize order of presentation of the "FOR" and "AGAINST" sets. Bullets not randomized within set].

Key arguments that are made FOR a storage and disposal system that integrates interim and permanent disposal facilities include the following: [] [Order of bullets for integrated system not randomized]

- Supporters argue that integrating the interim and permanent storage and disposal facilities in a coordinated fashion would provide an efficient, safe, and cost-effective way for managing spent nuclear fuel:
- Siting and building the *interim* facilities first has several advantages, including:

1. Supporters argue that interim facilities can be built relatively soon (10-15 years) to safely store spent nuclear fuel, allowing adequate time to site and build a permanent storage and disposal facility. Interim facilities would also allow early removal of spent nuclear fuel from temporary storage sites where nuclear reactors have been dismantled or shut down, and for which expensive security measures must be continued to protect the stored nuclear materials.

2. The interim storage facilities could consolidate the growing amount of radioactive materials currently being stored at or near nuclear power plants, many of which are near large population centers, rivers, and oceans.
3. Supporters argue that interim facilities could be designed with capabilities to repackage spent nuclear fuel into containers specifically engineered for transportation and emplacement in the permanent disposal facility, once it is sited and built.

- Siting and building the *permanent* disposal facility in coordination with the interim facilities has several advantages, including:
    1. Supporters argue that radioactive materials can be permanently isolated in the disposal facility using a combination of engineered (containers and structures) and natural barriers (rock, salt, or clay), leaving no burden or obligation for future generations to actively maintain the facility.
    2. Once a site for the permanent disposal facility has been selected, supporters argue that spent fuel can be repackaged at interim facilities into specially engineered containers to be shipped for permanent disposal.
    3. Supporters argue that repackaging of spent fuel into smaller, specially engineered containers will make the design and operation of the permanent storage and disposal facility safer and more efficient.

Key arguments that are made AGAINST a storage and disposal system that integrates interim andrpermanent disposal facilities include the following: [Order of bullets not Randomized]

- Opponents argue that attempting to integrate interim and permanent storage and disposal facilities for spent nuclear fuel in a coordinated fashion would be a costly, redundant, and risky way manage spent nuclear fuel:
- Siting and building the *interim* facilities has several disadvantages, including:
    1. Opponents argue that at least for now, expanding current "on-site" storage practices at or near *existing* operational nuclear power plants is cheaper and politically more acceptable than pursuing interim storage facilities in coordination with siting a permanent disposal facility.
    2. Opponents argue that transporting spent nuclear fuel to the interim sites will pose greater risks than would continuing temporary storage "on-site" at operating or dismantled nuclear power plants.
    3. In order to avoid shipping the spent fuel two times (first to an interim facility, and later to a permanent disposal facility), some opponents argue that it would be better to wait until a permanent disposal facility has been sited and built before moving the spent fuel from the temporary "on-site" storage facilities.

- Siting and building a *permanent* storage and disposal facility has several disadvantages:
    1. Opponents argue that we can never be completely certain that nuclear materials would not leak into the ground from a permanent disposal facility, exposing the people and the environment near the facility to radioactive materials.
    2. Opponents argue that the number of suitable sites for spent fuel storage and disposal are limited, and it will be very difficult to find enough local communities and states willing to host both interim and permanent facilities.
    3. For these reasons, opponents argue that it is better to focus on siting a permanent disposal facility, and leave the spent fuel in temporary storage "on-site" at operating and decommissioned nuclear power plants until then.

e36L_info_integ: When thinking about the information provided on this page, would you say that you…

	Learned something new	Already knew the information	Don't understand the information
%	1	2	3
2016	88	5	6

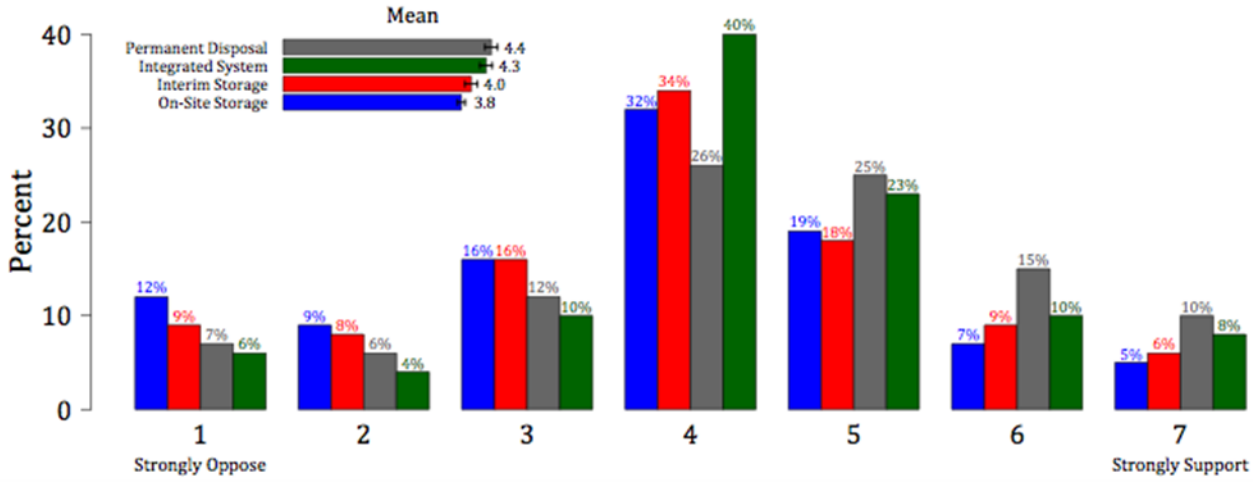

Figure 4. Support for Continued On-Site Storage, Consolidated Interim Storage, and Disposal Separately and Consolidated Interim Storage and Disposal as Integrated System in 2016.

e37L_integ_spt: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about pursuing an integrated spent nuclear fuel management system in the U.S., including the coordinated siting and construction of interim and permanent storage and disposal facilities?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
2016 web	6	4	10	40	23	10	8	4.3

*****END SPLIT J/K/L*****

Next we want you to consider the design of permanent storage and disposal facilities for the United States. Scientists and engineers are considering three general options: [Three Options Randomized]

- Store spent nuclear fuel at or near the surface of the earth in concrete and steel structures. This allows monitoring and future retrieval of the spent fuel. It is considered to provide a safe means to manage the material for about a hundred years.

- Build mine-like storage facilities that are up to several thousand feet deep underground. These can be constructed to allow materials to be retrieved, or they can be designed to permanently block access in the future. They are suitable for storage over many thousands of years, and are expected to contain the material until it is no longer radioactive.

- Drill multiple boreholes of about 1.5 feet in diameter and up to three miles deep. Spent nuclear fuel would be stored in the deepest parts of the boreholes that are in bedrock. There is almost no chance that the materials could migrate into the surface environment over many thousands of years, and are expected to contain the material until it is no longer radioactive. The spent nuclear fuel would be extremely difficult to retrieve after the boreholes are sealed.

Please respond to the three following policy options on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*. [random table for e38_facility1—e40_facility3]

e38_facility1: Construct storage facilities at or near the surface of the earth that are less permanent but allow retrieval for reprocessing, research, or other treatments.

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
2016 web	13	12	14	25	18	11	7	3.84
2012 web	9	13	14	27	20	11	6	3.93
2011 comb	10	12	17	27	19	10	5	3.84
2010 comb	9	10	13	26	20	14	8	4.14

(2016 vs. 2012: $p = 0.\ 0.1548$)

e39_facility2: Construct storage facilities underground that are like mines that could be either permanently sealed or could allow materials to be retrieved.

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
2016 web	6	5	7	22	26	19	15	4.76
2012 web	5	4	7	24	25	21	13	4.78
2011 comb	6	3	8	21	29	20	13	4.76
2010 comb	4	5	7	23	21	22	18	4.89

(2016 vs. 2012: $p = 0.\ 7756$)

e40_facility3: Construct very deep boreholes that would provide permanent and safe disposal, but would make materials extremely difficult to retrieve after the boreholes are sealed.

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
2016 web	8	7	11	22	18	19	13	4.48
2012 web	9	12	17	25	18	12	7	3.98
2011 comb	9	12	16	21	19	13	9	4.04
2010 comb	9	10	14	27	17	12	11	4.14

(2016 vs. 2012: $p < 0.001$)

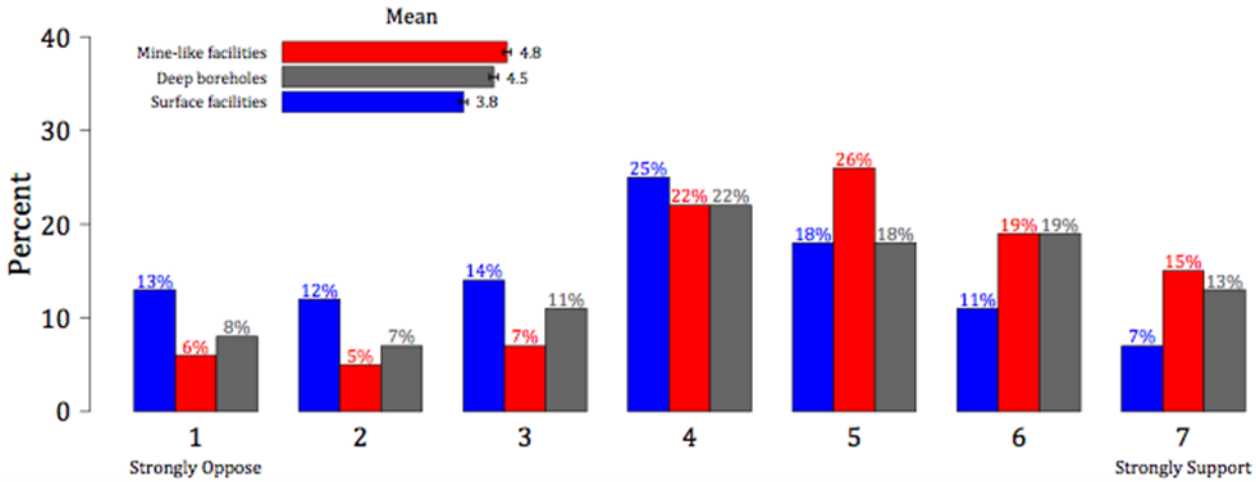

Figure 5. Public Support in 2016 for Facility Design Options for Storage and Disposal.

One additional important consideration for radioactive materials management in the U.S. is what to do with the high-level radioactive waste left over from the country's defense programs, such as the waste created during the production of U.S. nuclear weapons. Some experts argue that these wastes should be disposed of along with spent nuclear fuel generated at commercial nuclear power plants in a "mixed waste" storage and disposal facility. Other experts argue that the defense wastes should be disposed of in a separate "defense waste only" storage and disposal facility. [Randomize order of presentation of the "FOR" and "AGAINST" sets.]

Key arguments that are made FOR a "defense waste only" facility include the following: [Order of bullets randomized FOR defense only]

- Supporters argue that defense wastes are older and cooler in temperature than commercial spent nuclear fuel and can be packaged in smaller containers, making the design and construction of a "defense waste only" facility less challenging.
- Supporters argue that construction of a "defense waste only" disposal facility could be used as a basis for demonstrating the safe and effective handling and disposal of spent nuclear fuel, making it easier to site and build a disposal facility for commercial spent fuel in the future.
- Some supporters argue that local communities and states may be more likely to consent to host a "defense waste only" disposal facility because these wastes were generated from programs important for national security.

Key arguments that are made AGAINST a "defense waste only" facility include the following: [Order of bullets randomized AGAINST defense only]

- Opponents argue that building a "defense waste only" disposal facility only solves a part of the nation's nuclear waste problem and may delay the successful disposal of commercial spent nuclear fuel.
- Opponents argue that having a separate "defense waste only" disposal facility will require consent for siting additional commercial spent nuclear fuel disposal facilities by prospective state and local communities near those facilities.
- Some opponents argue that "mixed waste" disposal facilities that can safely store both commercial and defense generated spent fuel will be more cost-effective in the long term.

Please respond to the two policy options listed below on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*. [random table for questions below]

e41_def_spt: Site and construct a "defense waste only" disposal facility in the U.S., only for the disposal of radioactive wastes generated by defense programs.

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
2016 web	8	10	13	31	17	11	9	4.12

e42_mixed_spt: Site and construct a "mixed waste" disposal facility in the U.S. for both defense wastes and commercial spent nuclear fuel.

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
2016 web	6	5	11	28	20	18	11	4.48

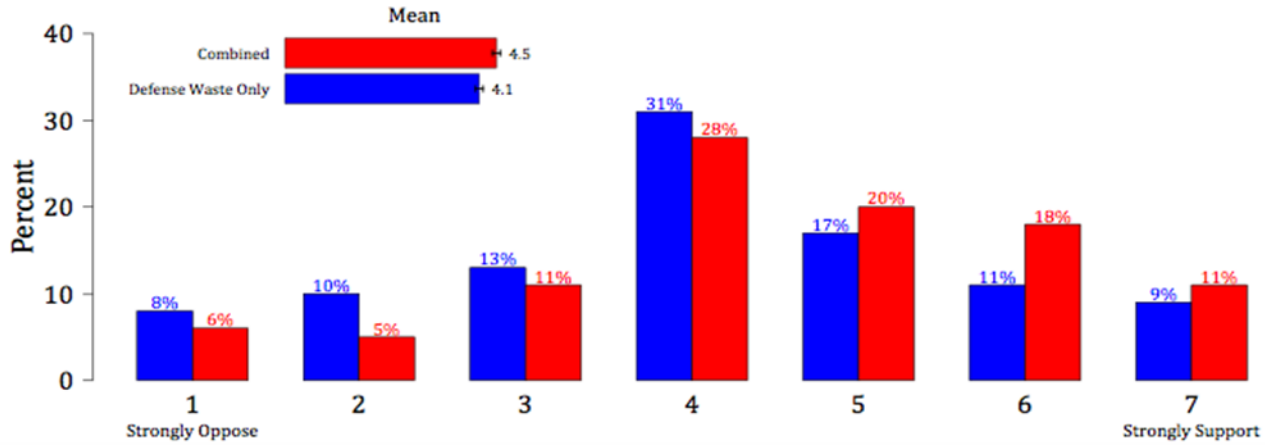

Figure 6. Public Support in 2016 for a Repository for Only Defense Waste Versus a Repository that Combines Defense and Commercial Wastes.

43_WIPP: Now we want to focus on a different topic. Have you heard or read about the Waste Isolation Pilot Plant (WIPP), located in southeastern New Mexico?

	No 0	Yes 1	Unsure 2
2016 web	79	9	13
2015 web	83	6	11
2014 web	81	8	12

The Waste Isolation Pilot Plant (WIPP) in New Mexico is the only deep geological repository in the U.S. for permanent disposal of certain classes of nuclear waste termed "transuranic materials." These radioactive materials were created during the production of U.S. nuclear weapons and are being buried in salt deposits at depths of about 2,000 feet under the New Mexico desert. The materials stored at the WIPP **DO NOT** include spent nuclear fuel from nuclear power plants. The site has been in operation since 1999.

On the evening of February 14, 2014, trace amounts of airborne radioactive materials were discovered above ground near the facility. It was determined that 21 workers were exposed to trace levels of radiation. No deaths or serious injuries have been reported, and no one is known to have been exposed to harmful levels of radiation. Government officials have said that the WIPP is on schedule to resume operations in 2016.

e44_WIPP_REP: On a scale from minus ten to plus ten, where minus ten means the experience at the Waste Isolation Pilot Plant (WIPP) in New Mexico *strongly reduces* your support, zero means the WIPP experience has *no effect* on your support, and ten means the WIPP experience *strongly increases* your support, how does the recent release of radiation at WIPP affect your support for building one or more storage and disposal sites for spent nuclear fuel in the U.S.?

	Strongly Reduced										No Effect										Strongly Increased	
	–10	–9	–8	–7	–6	–5	–4	–3	–2	–1	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	11	3	5	5	4	6	4	4	5	3	28	2	3	2	3	4	3	2	2	1	2	-1.83
2015 web	11	3	4	5	3	6	4	4	5	5	28	2	1	2	3	4	3	2	2	1	1	-1.87

(2016 vs. 2015: p = 0.8494)

Storage and disposal of spent nuclear fuel can be technically complex, and getting information you can trust is important. Please indicate your level of trust in information provided by technical experts from each of the following organizations using a scale from zero to ten, where zero means *no trust* and ten means *complete trust.* [Random Order: e45_NRC_trust—e59_natmedia_trust]

e45_NRC_trust: The U.S. Nuclear Regulatory Commission

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	6	3	4	6	8	17	13	16	13	8	7	5.76
2015 web-M	6	3	5	5	9	19	13	17	11	9	3	5.59
2014 web	8	3	6	5	8	19	13	12	12	9	6	5.57
2012 web	5	3	4	6	8	17	13	14	14	10	7	5.87
2011 web	6	3	5	6	9	20	11	15	13	7	5	5.49
2010 web	6	3	5	6	9	21	11	13	13	7	6	5.56

(2016 vs. 2015: $p = 0.1458$)
(2015 vs. 2014: $p = 0.8591$)
(2014 vs. 2012: $p = 0.0002$)

e46_EPA_trust: The U.S. Environmental Protection Agency

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	7	3	4	6	6	14	13	15	15	9	8	5.86
2015 web-M	8	3	3	4	8	16	12	16	15	9	5	5.76
2014 web	8	4	5	6	6	14	13	13	14	11	8	5.77
2012 web	7	3	4	4	7	15	13	14	14	10	9	5.95
2011 web	7	3	6	6	8	18	12	14	13	7	6	5.54
2010 web	8	4	6	5	8	18	12	12	14	7	7	5.55

(2016 vs. 2015: $p = 0.4224$)
(2015 vs. 2014: $p = 0.9805$)
(2014 vs. 2012: $p = 0.0772$)

e47_labs_trust: U.S. national laboratories for energy and security

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	5	2	4	6	8	17	14	17	13	9	6	5.88
2015 web-M	5	3	4	5	9	19	14	16	13	8	3	5.71
2014 web	5	3	4	5	7	19	14	14	15	8	6	5.81
2012 web	4	2	4	4	8	18	14	15	16	10	6	6.04
2011 web	5	3	4	6	10	21	13	15	13	7	4	5.63
2010 web*	9	5	6	7	11	20	11	12	10	5	5	5.00

* U.S. government-owned energy and national security laboratories

(2016 vs. 2015: p = 0.1303)
(2015 vs. 2014: *p* = 0.4162)
(2014 vs. 2012: *p* = 0.0035)

e48_NAS_trust: The National Academy of Sciences

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	3	2	2	4	6	17	11	16	17	12	10	6.49
2015 web-M	3	2	2	3	8	18	12	17	16	13	6	6.39
2014 web	4	2	3	3	6	17	12	15	18	12	9	6.40
2012 web	3	2	2	3	8	17	12	15	16	12	9	6.38
2011 web	3	2	3	5	8	20	12	14	16	9	7	6.08
2010 web	4	2	4	5	9	20	12	14	15	9	7	5.98

(2016 vs. 2015: p = 0.3590)
(2015 vs. 2014: p =9681)
(2014 vs. 2012: *p* = 0.5093)

e49_state_trust: State regulatory agencies

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	7	3	6	7	10	21	11	14	11	5	5	5.31
2015 web-M	5	4	5	7	10	23	15	12	10	6	3	5.28
2014 web	8	4	6	8	8	21	14	11	11	6	4	5.18
2012 web	6	4	5	8	11	21	13	13	10	6	4	5.22
2011 web	7	5	7	9	11	23	12	11	9	4	3	4.89
2010 web	8	4	7	9	11	21	13	11	8	4	3	4.81

(2016 vs. 2015: p = 0.8275)
(2015 vs. 2014: p = 0.4166)
(2014 vs. 2012: *p* = 0.4974)

e50_enviro_trust: Environmental advocacy groups

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web*	7	4	4	5	8	17	13	13	13	7	7	5.60
2015 web-M	7	2	3	5	9	20	12	15	14	9	5	5.71
2014 web	7	4	6	5	7	19	13	14	12	7	6	5.50
2012 web	8	4	5	6	9	17	12	11	13	8	7	5.51
2011 web	10	4	5	7	10	20	12	12	11	6	4	5.10
2010 web	10	5	6	6	9	19	10	12	11	6	6	5.16

* Wording change 2016; previously "Environmental advocacy groups, such as the National Resources Defense Council or the Sierra Club"

(2016 vs. 2015: p = 0.3470)
(2015 vs. 2014: p = 0.09859)
(2014 vs. 2012: *p* = 0.1992)

e51_antinuke_trust: Advocacy groups that *oppose* nuclear energy and technologies

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	8	5	8	7	10	19	12	11	9	6	5	5.02

e52_pronuke_trust: Advocacy groups that *support* nuclear energy and technologies

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	10	5	8	8	10	21	11	12	6	5	5	4.74

From 2010 to 2015, asked trust about the Nuclear Energy Institute, which represents the nuclear power industry

e53_util_trust: Utility companies that own nuclear power plants

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	12	7	8	9	10	17	11	10	8	4	4	4.49
2015 web-M	15	6	7	10	12	16	11	9	7	4	3	4.24
2014 web	13	7	10	9	10	17	10	9	8	4	3	4.32
2012 web	12	7	9	10	11	16	12	9	7	4	3	4.39
2011 web	12	8	10	9	12	19	10	8	6	3	2	4.17

(2016 vs. 2015: p = 0.0635)
(2015 vs. 2014: p = 0.5751)
(2014 vs. 2012: *p* = 0.3873)

e54_DOE_trust: The U.S. Department of Energy

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	6	3	5	6	8	16	14	15	12	8	6	5.65
2015 web-M	6	3	5	7	10	17	15	14	13	8	3	5.46
2014 web	7	4	6	5	7	18	14	12	12	8	6	5.45
2012 web	6	3	4	5	8	19	13	14	13	8	6	5.72
2011 web	7	3	4	8	10	20	12	14	12	6	4	5.40

(2016 vs. 2015: p = 0.1197)
(2015 vs. 2014: p = 0.9084)
(2014 vs. 2012: *p* = 0.0021)

e55_local_emergency_trust: State and local emergency response agencies, such as the police and fire departments

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	4	2	3	5	7	17	12	16	16	8	9	6.09
2015 web-M	5	2	3	6	7	18	14	16	14	10	5	5.91

(2016 vs. 2015: p = 0.1020)

e56_fedcorp_trust: A new independent agency of the federal government, with leadership appointed by the president with the advice and consent of the Senate, that is funded by fees from nuclear energy, and that is given responsibility for managing spent nuclear fuel from U.S. nuclear power plants. It would be subject to a Federal Oversight Board.

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	10	5	5	7	8	16	14	11	12	7	5	5.20
2015 web-S	8	5	8	6	9	19	9	14	11	6	4	5.09
2014 web-F	11	5	7	7	11	20	11	9	8	6	4	4.78

(2016 vs. 2015: p = 0 4723
(2015 vs. 2014: *p* =0.0935)

e57_univ_trust: University scientists that study nuclear energy and technologies

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	3	2	2	4	5	14	11	16	17	14	12	6.64

e58_stmedia_trust: State and local news or media

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	13	7	8	8	10	17	10	9	8	6	4	4.57

e59_natmedia_trust: National news or media

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
2016 web	14	8	9	10	8	16	9	10	8	4	5	4.40

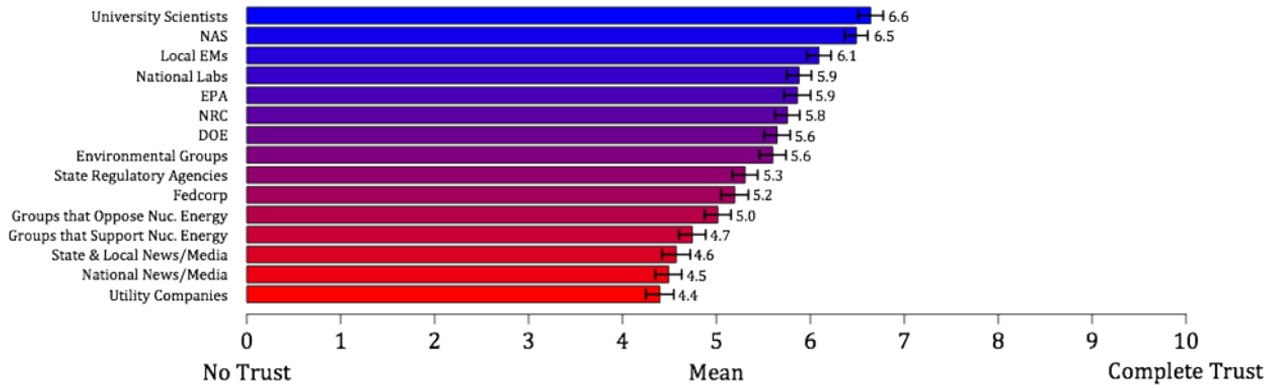

Figure 7. Public Trust in Technical Experts from Institutions Providing Information on Storage and Disposal of SNF in 2016 National Survey.

As you may recall, a severe earthquake occurred on March 11, 2011 in the Pacific Ocean near Japan, creating large tidal waves that destroyed some Japanese coastal cities. Also damaged was the Fukushima nuclear power plant, which released radioactivity into the atmosphere and nearby portions of the sea. The earthquake and tidal wave killed thousands of people; the release of radiation at Fukushima is not known to have produced any deaths, but could contribute to future illnesses. We would like to know how the Japanese experience has influenced your confidence in U.S. nuclear power.

e60_Jpn: On a scale from minus ten to plus ten, where minus ten means the Japanese experience has *strongly reduced* your support for U.S. nuclear power production, zero means the Japanese experience has had *no effect* on your support, and plus ten means the Japanese experience has *strongly increased* your support, how have recent events in Japan influenced your support for nuclear power production in the United States?

	Strongly Reduced										No Effect										Strongly Increased	
	–10	–9	–8	–7	–6	–5	–4	–3	–2	–1	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	11	3	5	4	4	6	4	4	5	4	30	1	3	2	3	3	2	2	1	0	2	-2.04
2015 web	11	3	5	4	4	5	4	5	5	4	34	1	2	1	2	2	1	1	1	1	1	-2.44
2014 web	13	4	4	4	4	5	4	6	5	4	34	1	2	1	1	3	2	1	0	0	1	-2.62
2013 web	11	3	4	3	4	4	4	5	5	4	37	2	2	2	2	2	1	1	1	0	2	–1.97
2012 web	9	2	2	3	3	4	3	6	6	6	40	2	2	2	2	2	1	1	1	1	2	–1.44
2011 web	7	2	3	3	3	5	4	5	5	4	39	2	2	2	3	3	2	2	1	1	2	–1.38

(2016 vs. 2015: p =0.0277)
(2015 vs. 2014: p =0.3891)
(2014 vs. 2013: p = 0.0016)

How have recent events in Japan influenced your support for nuclear power production in the United States?

How does the recent release of radiation at WIPP affect your support for building one or more storage and disposal sites for spent nuclear fuel in the U.S.?

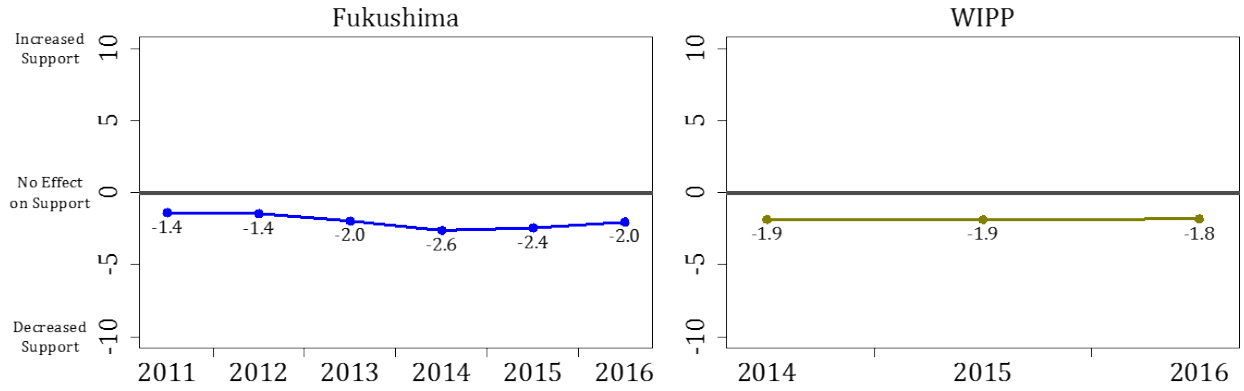

Figure 8. Influence of Events at Fukushima Japan and Waste Isolation Pilot Plant on Support for Nuclear Power and Support for Storage and Disposal Sites.

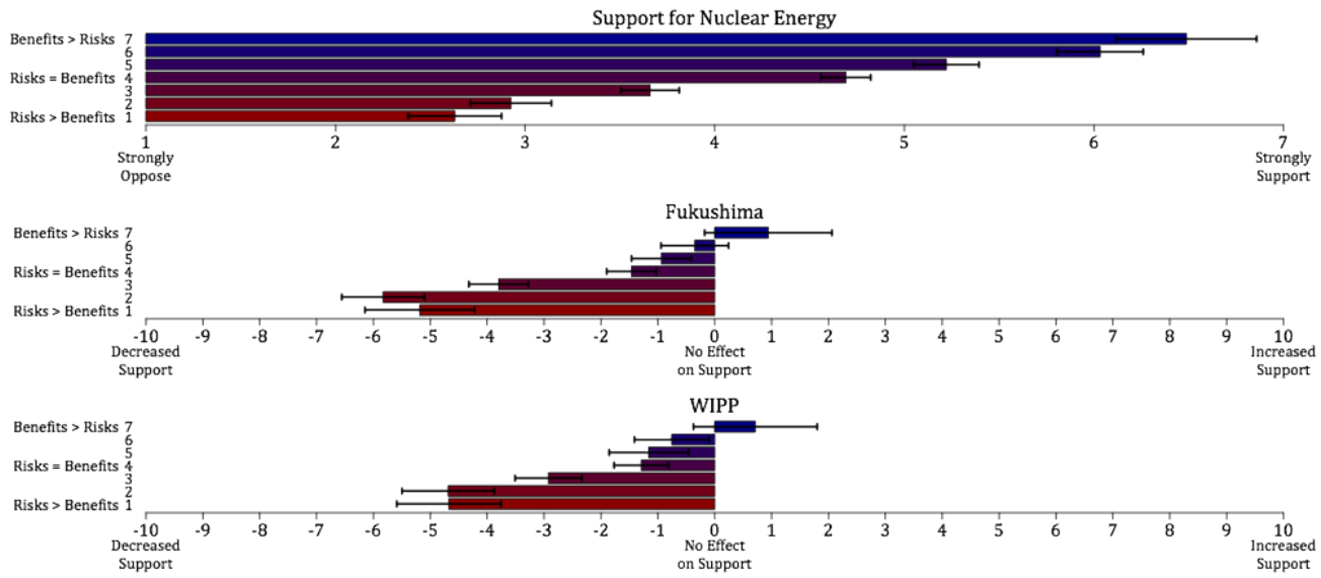

Figure 9. Influence of Risk/Benefit Perceptions and Nuclear Accidents on Support for Nuclear Energy

*****SPLIT M/N: risk assessment bias vs. benefit assessment bias*****
Track M (50%): perceived risk assessment bias

Now we want to know more about your impressions of how different organizations are likely to describe the risks associated with hosting a permanent disposal facility for spent nuclear fuel. Using a scale from one to seven, where one means the organization is likely to *downplay* risks, four means the organization is likely to *accurately describe* risks, and seven means the organization is likely to *exaggerate* risks, please rate your impressions of how each organization is likely to describe the risks of hosting a facility for spent nuclear fuel disposal. [Random Order: e61M_NRC_rsk— e75M_natmedia_rsk]

e61M_NRC_rsk: The U.S. Nuclear Regulatory Commission

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	10	11	20	39	10	6	4	3.63

e62M_EPA_rsk: The U.S. Environmental Protection Agency

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	7	5	16	38	18	10	6	4.08

e63M_labs_rsk: U.S. national laboratories for energy and security

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	6	7	18	48	10	7	4	3.85

e64M_NAS_rsk: The National Academy of Sciences

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	4	4	10	56	15	7	5	4.12

e65M_state_rsk: State regulatory agencies

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	8	9	21	37	15	7	3	3.74

e66M_NGO_rsk: Environmental advocacy groups

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	5	5	7	26	25	16	16	4.75

e67M_antinuk_rsk: Advocacy groups that *oppose* nuclear energy and technologies

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	4	5	7	22	19	21	21	3.8

e68M_pronuk_rsk: Advocacy groups that *support* nuclear energy and technologies

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	20	17	23	22	10	5	5	3.18

e69M_util_rsk: Utility companies that own nuclear power plants

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	23	20	21	21	6	5	4	3.00

e70M_DOE_rsk: The U.S. Department of Energy

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	9	8	24	39	9	7	3	3.65

e71M_local_emergency_rsk: State and local emergency response agencies, such as the police and fire departments

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	5	5	13	48	16	9	4	4.08

e72M_fedcorp_rsk: A new independent agency of the federal government, with leadership appointed by the president with the advice and consent of the Senate, that is funded by fees from nuclear energy, and that is given responsibility for managing spent nuclear fuel from U.S. nuclear power plants. It would be subject to a Federal Oversight Board.

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	12	10	20	35	12	6	4	3.60

e73M_univ_rsk: University scientists that study nuclear energy and technologies

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	5	5	8	57	12	7	5	4.11

e74M_stmedia_rsk: State and local news or media

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	7	6	12	25	21	17	12	4.43

e75M_natmedia_rsk: National news or media

	Downplay Risks			Accurately Describe Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
2016 web	8	4	12	26	18	18	14	4.53

Track N (50%): perceived benefit assessment bias

Now we want to know more about your impressions of how different organizations are likely to describe the benefits associated with hosting a permanent disposal facility for spent nuclear fuel. Using a scale from one to seven, where one means the organization is likely to *downplay* benefits, four means the organization is likely to *accurately describe* benefits, and seven means the organization is likely to *exaggerate* benefits, please rate your impressions of how each organization is likely to describe the benefits of hosting a facility for spent nuclear fuel disposal. [Random Order: e61M_NRC_ben—e75M_natmedia_ben]

e61N_NRC_ben: The U.S. Nuclear Regulatory Commission

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	4	4	9	38	24	12	10	4.48

e62N_EPA_ben: The U.S. Environmental Protection Agency

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	7	5	12	39	19	12	6	4.16

e63N_labs_ben: U.S. national laboratories for energy and security

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	4	4	8	46	21	10	7	4.35

e64N_NAS_ben: The National Academy of Sciences

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	3	2	8	54	18	9	5	4.28

e65N_state_ben: State regulatory agencies

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	5	4	12	41	20	11	7	4.30

e66N_enviro_ben: Environmental advocacy groups

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	13	11	15	29	13	10	8	3.80

e67N_antinuk_ben: Advocacy groups that oppose nuclear energy and technologies

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	19	15	13	25	12	9	6	3.47

e68N_pronuk_ben: Advocacy groups that support nuclear energy and technologies

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	5	5	10	22	19	19	19	4.79

e69N_util_ben: Utility companies that own nuclear power plants

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	7	5	10	21	16	21	22	4.82

e70N_DOE_ben: The U.S. Department of Energy

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	5	3	9	38	23	13	9	4.45

e71N_local_emergency_ben: State and local emergency response agencies, such as the police and fire departments

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	5	5	14	46	16	8	6	4.11

e72N_fedcorp_ben: A new independent agency of the federal government, with leadership appointed by the president with the advice and consent of the Senate, that is funded by fees from nuclear energy, and that is given responsibility for managing used nuclear fuel from U.S. nuclear power plants. It would be subject to a Federal Oversight Board.

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	6	5	9	37	20	12	11	4.43

e73N_univ_ben: University scientists that study nuclear energy and technologies

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	4	5	9	49	17	11	5	4.26

e74N_stmedia_ben: State and local news or media

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	7	9	15	29	19	11	9	4.15

e75N_natmedia_ben: National news or media

	Downplay Benefits			Accurately Describe Benefits			Exaggerate Benefits	
%	1	2	3	4	5	6	7	Mean
2016 web	9	9	15	29	17	10	11	4.11

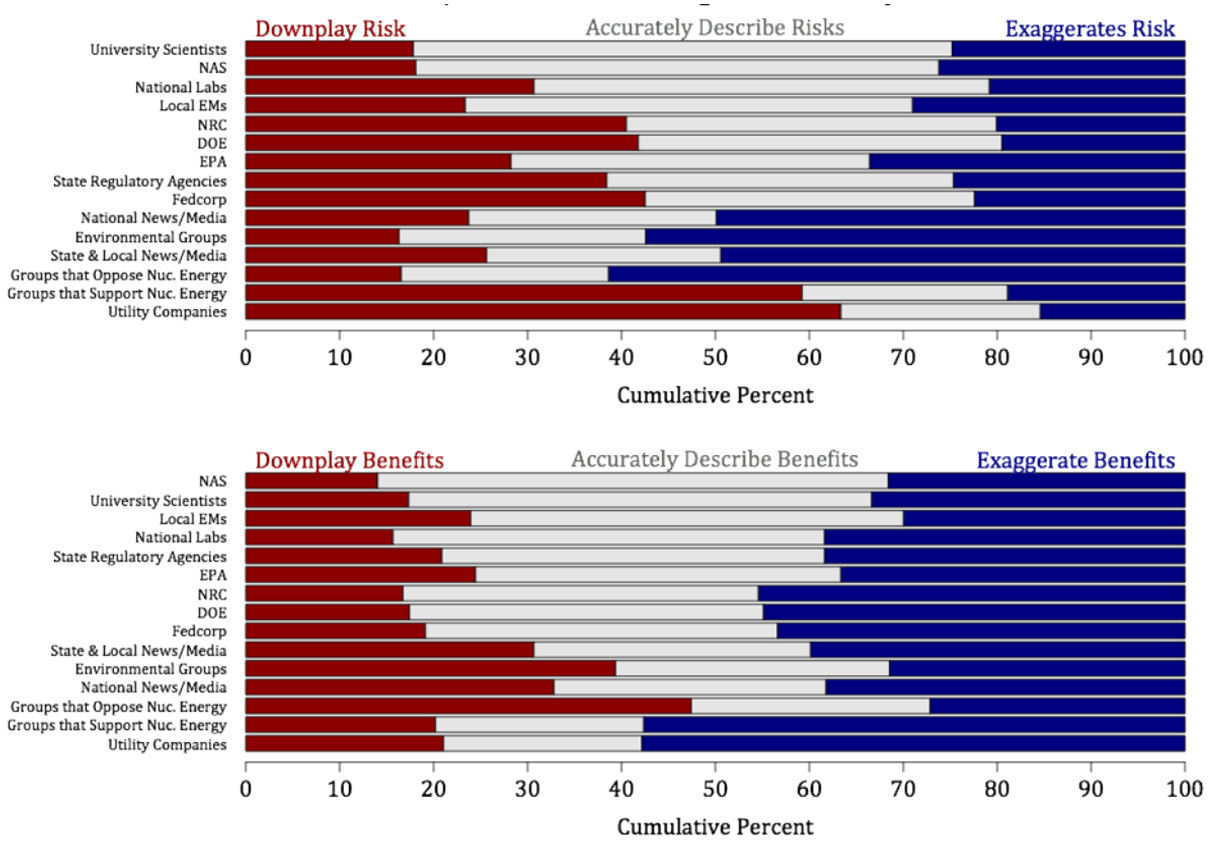

Figure 10. Public Perception about How Various Institutions are Likely to Describe the Risks/Benefits of Hosting a SNF Facility

*****END SPLIT M/N*****

Now we want you to consider the issue of "consent" for the case where a town 50 miles from your primary residence has volunteered to be considered for hosting a permanent disposal facility for spent nuclear fuel. The primary questions are how consent can be granted and how it can be withdrawn during the process for deciding whether or not to move forward with the proposal. The process involves numerous groups who have a stake in whether the site is chosen. Deciding what constitutes "consent" to approve the siting of the facility, and who should have a say, are complex issues.

People and their political representatives from the area around the proposed site might be affected in different ways. We are interested in your views about the different roles that different individuals should have in the decision to proceed with the proposal. The different roles could include:

- requiring consent before proceeding;
- requiring that their concerns be addressed, but not requiring their consent; or
- not requiring either consent or that their concerns be addressed.

For each of the following actors, please select the appropriate role YOU think they should have in deciding whether or not to proceed with the proposal to site a facility in [insert state].
[Random order for items **e76_veto1 – e76_veto12**]

%, 16 web	N	Consent not required but concerns need to be addressed 0	Consent not required, concerns need not be addressed 1	Consent required and concerns need to be addressed 2
1. The Governor of [insert state]	2078	28	11	60
2. Either of the two U.S. senators from [insert state]	2087	36	11	53
3. The U.S. congresspersons representing the district in which the site is located	2089	34	11	55
4. The leaders of [insert state]'s legislature	2083	33	11	55
5. Tribal authorities of affected Native American communities	2089	31	13	56
6. [insert state]'s environmental protection agency or its equivalent	2086	29	8	63
7. A majority of the citizens, including those in Native American communities, residing within 100 miles of the proposed site	2090	27	10	63
8. A majority of the voters of [insert state], including affected Native American communities	2083	27	9	64
9. The U.S. Nuclear Regulatory Commission	2079	24	10	65
10. The U.S. Environmental Protection Agency	2081	27	9	64
11. The U.S. Department of Energy	2086	26	11	63
12. Nongovernmental environmental interest groups in [insert state]	2087	42	18	40

The process of reaching consent by affected communities and states for siting permanent storage and disposal facilities for spent nuclear fuel will be complex and is likely to take many years to complete. On a scale from zero to ten, where zero means *no trust* and ten means *complete trust,* in your view, how much would you trust each of the following agencies to lead and facilitate that process? [randomize e77_DOE_lead_trust – e80_Fedcorp_lead_trust]

e77_DOE_lead_trust: U.S. Department of Energy

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	7	2	5	6	7	18	13	14	13	9	6	5.73

e78_EPA_lead_trust: U.S. Environmental Protection Agency

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	7	2	4	4	6	17	12	14	14	9	9	5.95

e79_NAS_lead_trust: The National Academy of Sciences

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	3	1	3	3	7	18	11	16	17	12	10	6.45

e80_Fedcorp_lead_trust: A new independent agency of the federal government, with leadership appointed by the president with the advice and consent of the Senate, that is funded by fees from nuclear energy, and that is given responsibility for managing spent nuclear fuel from U.S. nuclear power plants. It would be subject to a Federal Oversight Board.

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	11	4	4	6	9	20	11	12	11	7	6	5.2

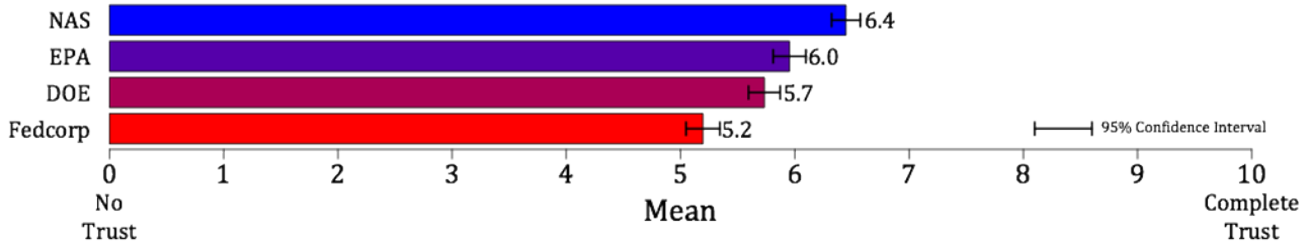

Figure 11. Public Trust in Institutions likely to Lead and Facilitate Siting a Nuclear Facility.

e81_lead_outcome: If the siting process was concluded, and a community within 50 miles of your primary residence consented to host a permanent disposal facility for spent nuclear fuel, in what way would having [randomly assign **e81_lead_outcome_rand:** the U.S. Department of Energy, the U.S. Environmental Protection Agency, the National Academy of Sciences, A new independent agency of the federal government responsible for managing spent nuclear fuel] lead and facilitate that process influence your level of support for the final decision?

	Greatly Decreased			No Difference			Greatly Increase	
	1	2	3	4	5	6	7	Mean
2016 web all	6	7	10	35	28	10	4	4.16
Independent Agency	7	12	10	35	25	7	4	3.96
National Academy of Sciences	5	4	7	36	33	12	4	4.4
Department of Energy	7	8	12	35	27	8	3	4.05
Environmental Protection Agency	7	5	12	34	28	11	4	4.19

Next we want to know more about your willingness to participate in political and civic activities ***excluding*** charities or charitable causes.

e82_regis: Are you registered to vote?

	No	Yes
%	0	1
2016 web	15	85
2015 web	11	89
2014 web	14	86
2013 web	12	88

e83_potus: Did you vote in the presidential election of 2012?

	No	Yes
%	0	1
2016 web	26	74
2015 web	21	79
2014 web	23	77
2013 web	19	81

e84_local: Do you usually vote in local elections, such as county supervisors, mayor, city council, school board, etc.?

	No	Yes
%	0	1
2016 web	34	66
2015 web	31	69
2014 web	33	67
2013 web	30	70

e85_camp: Have you actively campaigned for any candidate or any political cause in the past ten years (not including charities or charitable causes)?

	No	Yes
%	0	1
2016 web	85	15
2015 web	84	16
2014 web	84	16
2013 web	82	18

e86_active: On a scale from zero to ten, where zero means *not at all active*, and ten means *extremely active*, how do you characterize your typical level of activity in local community organizations and civic

	Not At All Active										Extremely Active	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	19	8	10	10	9	17	9	9	5	1	3	3.8
2015 web	20	9	13	10	9	16	9	7	4	2	2	3.5
2014 web	20	8	13	11	8	19	9	7	4	1	2	3.5
2013 web	14	7	12	12	8	18	11	#	5	2	2	4.0

(2016 vs. 2015: p =0.0099)
(2015 vs. 2014: p =0.7669)
(2014 vs. 2013: $p < 0.0001$)

We want to know how likely it is that you would actively participate in the debate and policy process if construction of an interim storage site for spent nuclear fuel was proposed within 50 miles of your residence. Please use a scale from one to seven, where one means *not at all likely*, and seven means *extremely likely*…

e87_attend: How likely is it that you would attend one or more informational meetings held by authorities who are developing the proposed permanent disposal facility for spent nuclear fuel?

%	Not At All Likely 1	2	3	4	5	6	Extremely Likely 7	Mean
2016 web	15	10	10	17	20	15	14	4.19
2015 web	13	8	10	19	17	16	16	4.31
2014 web	12	11	10	18	18	15	17	4.30
2013 web-S	12	7	10	19	20	15	16	4.37

(2016 vs. 2015: $p = 0.1119$)
(2015 vs. 2014: $p = 0.878$)
(2014 vs. 2013: $p = 0.9655$)

e88_speak: How likely is it that you would speak at a public hearing in your area held by authorities who are developing the proposed permanent disposal facility for spent nuclear fuel?

%	Not At All Likely 1	2	3	4	5	6	Extremely Likely 7	Mean
2016 web	31	16	12	15	11	7	6	3.10
2015 web	33	14	10	18	12	6	6	3.06
2014 web	31	17	10	17	11	7	7	3.08
2013 web-S	31	18	12	18	10	7	4	2.97

(2016 vs. 2015: p = 0.8623)
(2015 vs. 2014: $p = 0.8312$)
(2014 vs. 2013: $p = 0.5076$)

e89_socmed: How likely is it that you would express your opinion on the proposed permanent disposal facility using social media such as Facebook or Twitter?

%	Not At All Likely 1	2	3	4	5	6	Extremely Likely 7	Mean
2016 web	21	10	9	16	14	15	14	3.93
2015 web	25	9	7	16	16	13	15	3.87
2014 web	21	10	9	15	17	13	14	3.91
2013 web-S	22	10	9	17	13	14	16	3.96

(2016 vs. 2015: $p = 0.4573$)
(2015 vs. 2014: $p = 0.615$)
(2014 vs. 2013: $p = 0.3949$)

e90_write: How likely is it that you would write letters, send emails, or make phone calls to your elected representatives expressing your opinion on the proposed permanent disposal facility?

%	Not At All Likely 1	2	3	4	5	6	Extremely Likely 7	Mean
2016 web	18	11	13	17	15	14	12	3.90
2015 web	18	12	10	18	18	10	12	3.86
2014 web	15	13	10	20	16	14	13	4.02
2013 web-S	13	10	10	20	20	13	14	4.20

(2016 vs. 2015: $p = 0.6091$)
(2015 vs. 2014: $p = 0.0518$)
(2014 vs. 2013: $p = 0.0182$)

e91_orgopp: How likely is it that you would help organize *opposition* to the proposed permanent disposal facility?

%	Not At All Likely 1	2	3	4	5	6	Extremely Likely 7	Mean
2016 web	27	12	13	20	12	9	6	3.29
2015 web	27	15	12	21	11	7	7	3.21
2014 web	27	17	12	20	12	6	6	3.17
2013 web-S	29	16	13	21	10	5	6	3.05

(2015 vs. 2014: $p = 0.62$)
(2014 vs. 2013: $p = 0.2402$)

e92_orgspt: How likely is it that you would help organize *support* for the proposed permanent disposal facility?

%	Not At All Likely 1	2	3	4	5	6	Extremely Likely 7	Mean
2016 web	32	15	11	19	10	8	5	3.03
2015 web	31	16	12	21	10	6	4	2.98
2014 web	31	16	11	21	12	7	3	3.01
2013 web-S	29	14	13	22	12	6	4	3.07

(2016 vs. 2015: $p = 0.4331$)
(2015 vs. 2014: $p = 0.676$)
(2014 vs. 2013: $p = 0.3539$)

e93_advise: If invited, how likely is it that you would participate as a member of a citizens' committee asked to help provide advice and oversight to the authorities who are developing the proposed permanent disposal facility if it required about [random 5, 10, 20] hours of your time each month for a year?

%	Not At All Likely 1	2	3	4	5	6	Extremely Likely 7	Mean
2016 web-All	21	11	11	19	16	12	10	3.74
2016 web: 5	21	10	10	20	16	12	10	3.79
2016 web: 10	21	10	10	19	15	14	11	3.85
2016 web: 20	21	12	13	20	16	10	7	3.58
2015 web-All	18	10	9	20	16	14	14	4.02
2015 web: 5	15	10	9	22	17	14	13	4.1
2015 web: 10	18	11	8	19	14	14	15	4.03
2015 web: 20	20	11	8	19	16	14	13	3.93
2014 web-All	19	12	12	18	15	11	12	3.78
2014 web: 5	18	14	13	18	14	11	12	3.81
2014 web: 10	22	10	9	18	15	14	12	3.83
2014 web: 20	18	13	14	20	17	8	10	3.7
2013-S: All	17	11	11	25	14	10	13	3.92
2013-S: 5	17	11	9	25	13	11	14	3.96
2013-S: 10	17	11	11	24	14	10	12	3.84
2013-S: 20	16	10	12	25	14	9	14	3.95

(2016-All vs. 2015-All: $p < 0.001$)
(2015- All vs. 2014-All: $p = 0.007$)
(2014-All vs. 2013-All: $p = 0.1052$)

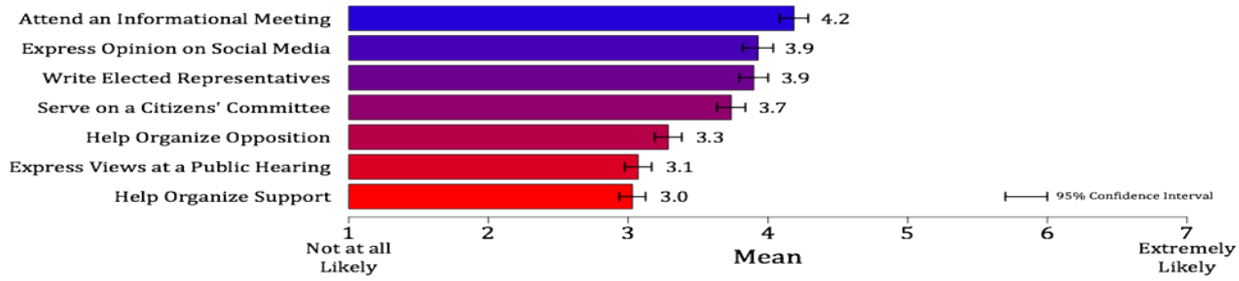

Figure 12: Public Preferences for Engagement in the Siting Process for an Interim Storage Facility

e94_DOE_campaign: Over the last six months, the U.S. Department of Energy has held a number of open meetings across the country to seek input from the public on designing a fair and effective process for siting the facilities needed to manage the nation's spent nuclear fuel and high-level radioactive waste. Before taking this survey, do you recall hearing about these meetings?

	No	Yes	Not Sure
%	0	1	3
2016 web	77	9	14

[if response is 1, ask follow up:]
e95_campaign_attend: Did you attend any of these meetings?

	No	Yes
%	0	1
2016 web	59	41

The next several questions are about your beliefs concerning a variety of issues.

e96_environ: On a scale where zero means the natural environment is *not at all threatened* and ten means the natural environment is on the *brink of disaster*, how do you assess the current state of the natural environment?

	Not At All Threatened										Brink of Disaster	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	2	1	3	7	7	18	17	19	14	4	7	6.00
2015 web	2	2	4	7	7	18	17	21	12	5	6	5.93
2014 web	3	3	5	7	8	16	19	19	12	4	6	5.74
2013 web	3	2	4	8	9	19	20	19	9	3	4	5.59
2012 web	2	1	4	9	10	22	18	20	8	2	3	5.53
2011 web	2	1	4	7	8	19	22	19	11	3	4	5.74
2010 web	2	3	4	7	7	20	17	20	11	4	5	5.78
2009 web	2	2	3	5	8	17	19	22	12	4	7	6.01
2008 comb	2	2	2	6	8	19	18	20	13	3	7	6.04

(2016 vs. 2015: $p = 0.4450$)
(2015 vs. 2014: $p = 0.0751$)
(2014 vs. 2013: $p = 0.1335$)

e97_doright: On a scale from zero to ten, where zero means *none of the time* and ten means *all of the time*, how much of the time do you trust the government in Washington to do what is right for the American people?

	None of the Time										All of the Time	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	14	9	13	13	10	16	9	9	4	1	3	3.78
2015 web	11	12	14	14	11	17	10	6	3	1	1	3.56
2014 web	16	10	15	16	9	13	8	4	3	2	2	3.3
2013 web	12	8	15	15	12	16	9	6	4	1	2	3.63
2012 web	12	10	13	15	11	19	8	7	3	1	1	3.62
2011 web	10	10	16	17	10	16	9	8	3	1	1	3.59
2010 web	13	9	12	13	11	17	10	8	4	1	2	3.79
2009 web	9	8	13	13	10	19	12	8	5	1	2	4.08
2008 comb	12	8	16	16	12	14	8	7	3	2	2	3.66

(2016 vs. 2015: $p = 0.0169$)
(2015 vs. 2014: $p = 0.0190$)
(2014 vs. 2013: $p = 0.0019$)

Please rate the degree to which each of the following four groups of statements describes your outlook on life, using a scale from zero to ten, where zero means *not at all* and ten means *completely.* [Random order: e98_H_rate—e101_F_rate]

e98_H_rate: I am more comfortable when I know who is, and who is not, a part of my group, and loyalty to the group is important to me. I prefer to know who is in charge and to have clear rules and procedures; those who are in charge should punish those who break the rules. I like to have my responsibilities clearly defined, and I believe people should be rewarded based on the position they hold and their competence. Most of the time, I trust those with authority and expertise to do what is right for society.

	Not At All										Completely	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	6	2	5	5	7	18	11	14	14	8	11	5.9
2015 web	6	4	7	7	7	16	11	12	13	7	8	5.6
2014 web	5	4	7	7	10	16	12	11	12	7	9	5.6
2013 web	4	5	7	8	9	13	13	15	12	8	6	5.6

(2016 vs. 2015: $p = 0.0021$)
(2015 vs. 2014: $p = 0.8364$)
(2014 vs. 2013: $p = 0.7419$)

e99_I_rate: Groups are not all that important to me. I prefer to make my own way in life without having to follow other peoples' rules. Rewards in life should be based on initiative, skill, and hard work, even if that results in inequality. I respect people based on what they do, not the positions or titles they hold. I like relationships that are based on negotiated "give and take," rather than on status. Everyone benefits when individuals are allowed to compete.

	Not At All										Completely	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	5	3	6	5	7	14	10	12	14	10	14	6.1
2015 web	5	3	5	8	6	15	10	13	12	11	11	6
2014 web	3	3	5	5	6	16	11	12	13	9	16	6.3
2013 web	4	4	5	7	8	10	12	14	14	11	10	6

(2016 vs. 2015: $p = 0.1649$)
(2015 vs. 2014: $p = 0.0042$)
(2014 vs. 2013: $p = 0.0071$)

e100_E_rate: My most important contributions are made as a member of a group that promotes justice and equality. Within my group, everyone should play an equal role without differences in rank or authority. It is easy to lose track of what is important, so I have to keep a close eye on the actions of my group. It is not enough to provide equal opportunities; we also have to try to make outcomes more equal.

	Not At All										Completely	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	8	4	6	7	8	18	10	11	12	7	9	5.42
2015 web	8	4	5	7	7	17	9	13	12	8	9	5.5
2014 web	6	4	8	8	9	13	11	10	12	8	11	5.6
2013 web	5	6	8	8	9	13	11	12	13	7	8	5.4

(2016 vs. 2015: $p = 0.2928$)
(2015 vs. 2014: $p = 0.4113$)
(2014 vs. 2013: $p = 0.0646$)

e101_F_rate: Life is unpredictable and I have very little control. I tend not to join groups, and I try not to get involved because I can't make much difference anyway. Most of the time other people determine my options in life. Getting along is largely a matter of doing the best I can with what comes my way, so I just try to take care of myself and the people closest to me. It's best to just go with the flow, because whatever will be will be.

	Not At All										Completely	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
2016 web	10	6	8	9	7	16	10	11	9	6	7	4.97
2015 web	10	10	10	10	7	15	10	9	8	5	6	4.6
2014 web	11	8	9	10	7	15	9	9	8	5	8	4.8
2013 web	9	9	13	10	10	11	10	9	8	6	5	4.4

(2016 vs. 2015: $p < 0.001$)
(2015 vs. 2014: $p = 0.2001$)
(2014 vs. 2013: $p = 0.0159$)

e103_party: With which political party do you most identify?

	Democratic	Republican	Independent	Other Party
%	1	2	3	4
2016 web	40	27	30	3
2015 web	39	24	36	1
2014 web	37	26	36	2
2013 web	42	25	31	2
2012 web	41	27	31	1
2011 comb	37	28	33	2
2010 comb	39	27	32	2
2009 web	41	32	25	2
2008 comb	42	34	22	2
2007 web	38	33	27	2
2006 comb	44	36	17	3

e104_iden: Do you completely, somewhat, or slightly identify with the **<e103_party fill>**?

	Slightly	Somewhat	Completely	
%	1	2	3	Mean
2016 web	9	50	41	2.32
2015 web	8	59	34	2.26
2014 web	8	56	37	2.29
2013 web	10	55	35	2.25
2012 web	9	57	34	2.24
2011 comb	12	56	32	2.2

2010 comb	10	56	34	2.25
2009 web	10	54	36	2.27
2008 comb	10	57	33	2.23
2007 web	13	61	26	2.12
2006 comb	21	57	22	2.01

e105_ideol: On a scale of political ideology, individuals can be arranged from strongly liberal to strongly conservative. Which of the following categories best describes your views?

%	Strongly Liberal 1	Liberal 2	Slightly Liberal 3	Middle of the Road 4	Slightly Conserv. 5	Conserv. 6	Strongly Conserv. 7	Mean
2016 web	7	14	11	34	13	14	7	4.03
2015 web	7	17	12	32	12	13	7	3.93
2014 web	8	13	11	35	12	16	5	3.99
2013 web	7	15	12	32	15	13	6	3.97
2012 web	7	16	11	33	12	15	6	3.97
2011 comb	4	12	12	35	14	16	7	4.18
2010 comb	5	13	12	32	13	16	8	4.15
2009 web	6	15	11	35	10	15	7	4.03
2008 comb	6	14	11	33	14	15	7	4.1
2007 web	4	13	12	36	14	15	6	4.09
2006 comb	5	13	12	31	14	17	8	4.21

(2016 vs. 2015: $p = 0.1290$)
(2015 vs. 2014: $p = 0.3846$)
(2014 vs. 2013: $p = 0.7055$)

e108e_comb_inc: Was the estimated annual income for your household in 2015:

%	<$10K 1	$10–20K 2	$20–30K 3	$30–40K 4	$40–50K 5	$50–60K 6	$60–70K 7
2016 web	8	11	11	10	6	8	7
2015 web	6	9	11	10	8	11	9
2014 web	8	13	17	13	8	12	7
2013 web	7	10	13	12	8	11	8
2012 web	8	12	12	12	10	13	8
2011 comb	8	11	13	12	9	10	9
2010 comb	8	13	14	13	10	10	8
2009 web	6	10	13	12	10	12	10
2008 comb	7	9	12	11	9	11	10
2007 web	6	10	12	11	7	12	11
2006 comb	4	8	12	12	11	12	11

%	$70–80K 8	$80–90K 9	$90–100K 10	$100–110K 11	$110–120K 12	$120–130K 13	$130–140K 14
2016 web	5	4	4	4	3	3	3
2015 web	6	5	4	3	3	2	2
2014 web	7	4	2	1	1	2	2
2013 web	7	5	4	2	2	3	2
2012 web	6	4	3	3	2	1	1
2011 comb	7	4	4	2	2	2	1
2010 comb	6	4	3	3	2	1	1
2009 web	8	4	3	3	2	2	1
2008 comb	8	5	3	4	2	2	2
2007 web	7	5	4	4	3	3	1
2006 comb	8	5	3	3	2	2	1

%	$140–150K 15	$150–160K 16	$160–170K 17	$170–180K 18	$180–190K 19	$190–200K 20	>$200K 21
2016 web	3	2	1	0	1	2	3
2015 web	2	2	1	1	0	1	3
2014 web	1	0	0	0	0	0	1
2013 web	1	1	0	0	0	1	2
2012 web	2	1	0	1	0	0	2
2011 comb	1	1	1	0	0	1	2
2010 comb	1	1	0	0	0	0	2
2009 web	1	1	0	0	0	0	2
2008 comb	1	1	0	0	0	0	3
2007 web	1	0	0	0	0	1	1
2006 comb	1	1	1	0	0	1	2

%	Median
2016 web	$50-60K
2015 web	$50-60K
2014 web	$30–40K
2013 web	$40–50K
2012 web	$40–50K
2011 comb	$45–50K
2010 comb	$40–50K
2009 web	$40–50K
2008 comb	$50–60K
2007 web	$50–60K
2006 comb	$50–60K

e109_web: About how often do you access the Internet using a computer or some sort of smartphone, like an Android or iPhone?

%	Never 0	< Once/ Month 1	Several Times/ Month 2	Once/Week 3	Several Times/Week 4	Once or Twice/Day 5	Several Times/Day 6
2016 web	NA	2	1	2	5	13	76
2015 web	NA	3	1	1	6	14	76
2014 web	NA	1	1	2	6	19	71
2013 web	NA	5	1	1	7	15	70
2012 web	NA	5	2	2	7	19	65
2011 comb	5	10	2	3	9	17	54

e110_twit: About how often do you use Twitter?

%	Never 0	< Once/ Month 1	Several Times/ Month 2	Once/Week 3	Several Times/Week 4	Once or Twice/Day 5	Several Times/Day 6
2016 web	0	56	10	5	6	9	7
2015 web	56	10	6	6	8	7	7
2014 web	64	11	4	5	7	4	4
2013 web	59	11	4	5	7	6	8
2012 web	70	9	3	5	4	4	4
2011 comb	81	6	2	3	3	2	3

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